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# Economic Growth

## Natural Resources

A Study Team Report
to the Task Force on Program Review

86-02090/

# NATURAL RESOURCES PROGRAM

## FROM CRISIS TO OPPORTUNITY

A Study Team Report
to the Task Force
on Program Review

September 1985

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# FOREWORD

The Task Force on Program Review was created in September 1984 with two major objectives - better service to the public and improved management of government programs. Recognizing the desirability of involving the private sector in the work of program review, assistance from national labour, business and professional organizations was sought. The response was immediate and generous. Each of these national organizations selected one of their members to serve in an advisory capacity. These public spirited citizens served without remuneration. Thus was formed the Private Sector Advisory Committee which has been responsible for reviewing and examining all of the work of program review.

The specific program reviews have been carried out by mixed study teams composed of a balance of private sector and public sector specialists, including representatives from provincial and municipal governments. Each study team was responsible for the review of a "family" of programs and it is the reports of these study teams that are published in this series. These study team reports represent consensus, including that of the Private Sector Advisory Committee, but not necessarily unanimity among study team members, or members of the Private Sector Advisory Committee, in all respects.

The review is unique in Canadian history. Never before has there been such broad representation from outside government in such a wide-ranging examination of government programs. The release of the work of the mixed study teams is a public acknowledgement of their extraordinarily valuable contribution to this difficult task.

Study teams reviewed existing evaluations and other available analyses and consulted with many hundreds of people and organizations. The teams split into smaller groups and consulted with interested persons in the private sector. There were also discussions with program recipients, provincial and municipal governments at all levels, from officials to cabinet ministers. Twenty provincial officials including three deputy ministers were members of various study teams.

The observations and options presented in these reports were made by the study teams. Some are subjective. That was necessary and appropriate considering that the review phase of the process was designed to be completed in a little more than a year. Each study team was given three months to carry out its work and to report. The urgent need for better and more responsive government required a fresh analysis of broad scope within a reasonable time frame.

There were several distinct stages in the review process. Terms of reference were drawn up for each study team. Study team leaders and members were appointed with assistance from the Private Sector Advisory Committee and the two Task Force Advisors: Mr. Darcy McKeough and Dr. Peter Meyboom. Mr. McKeough, a business leader and former Ontario cabinet minister, provided private sector liaison while Dr. Meyboom, a senior Treasury Board official, was responsible for liaison with the public sector. The private sector members of the study teams served without remuneration save for a nominal per diem where labour representatives were involved.

After completing their work, the study teams discussed their reports with the Private Sector Advisory Committee. Subsequently, their findings were submitted to the Task Force led by the Deputy Prime Minister, the Honourable Erik Nielsen. The other members are the Honourable Michael Wilson, Minister of Finance, the Honourable John Crosbie, Minister of Justice, and the President of the Treasury Board, the Honourable Robert de Cotret.

The study team reports represent the first orderly step toward cabinet discussion. These reports outline options as seen by the respective study teams and present them in the form of recommendations to the Task Force for consideration. The reports of the study teams do not represent government policy nor are they decisions of the government. The reports provide the basis for discussion of the wide array of programs which exist throughout government. They provide government with a valuable tool in the decision-making process.

Taken together, these volumes illustrate the magnitude and character of the current array of government programs and present options either to change the nature of these programs or to improve their management. Some decisions were announced with the May budget speech, and some subsequently. As the Minister of Finance noted in the May budget speech, the time horizon for implementation of some measures is the end of the decade. Cabinet will judge the pace and extent of such change.

These study team reports are being released in the hope that they will help Canadians understand better the complexity of the issues involved and some of the optional solutions. They are also released with sincere acknowledgement to all of those who have given so generously of their time and talent to make this review possible.

# TERMS OF REFERENCE

## Background

There are some 60 programs which are directed in whole or in part to the natural resource sector. Costs were estimated at roughly $3.7 billion (including $2.3 billion in tax expenditures) and 2,547 person-years in six departments in 1984/85.

Programs include fisheries, mining, forestry and some northern expenditures. They involve tax incentives, federal-provincial agreements, subsidies, insurance, price stabilization, research and development, licensing and inspections. Energy related resources (oil, natural gas, hydro) are not included, nor are water and wildlife, which are the subject of internal review by Environment Canada.

These programs have a major impact on long-term resource availability and yield, as well as on economic and regional development, employment, environment. In this context, the study team will provide the Ministerial Task Force on Program Review with a modified list of programs and with observations and recommendations concerning:

a. the adequacy and long-term impact of Canada's management of its natural resources, together with proposed federal strategies to maximize yield over the long-term;
b. the economic, and in particular regional and employment, implications of present use and management of natural resources, together with proposed measures to improve client and public benefits; and
c. effectiveness and efficiency of programs, together with proposed measures to ensure that programs are effective from the point of view of both objectives and simplicity of administration.

In conducting this review, the study team will consult with departments, provincial, and private sector representatives, and will take full account of on-going activities or initiatives which are relevant to the study. Advice and information will be sought specifically on:

a. appropriateness and targeting of programs;
b. adequacy of program objectives, activities and resources;
c. areas of duplication and fragmentation between federal, provincial, and private sector organizations;
d. programs which could be eliminated, reduced in scope, consolidated, or changed in form;
e. legislation which would be required to implement any of these program changes; and
f. resource implications of recommended program changes, including increased costs or savings and the number and location of either increases or decreases in staff.

As background to its conclusions, the study team is asked to obtain answers to three sets of questions or concerns regarding beneficiaries, efficiency and overlap, and gaps and omissions:

**Beneficiaries**

The geographical distribution of the beneficiaries and expenditures for each major natural resource program.

The extent to which natural resource programs have been related to the requirements of each industry sector and have had lasting effects on employment and overall industry performance (including international competitiveness).

The value to beneficiaries of measures other than cash transfers, such as insurance, inspection and marketing.

**Efficiency and Overlap**

Programs which are particularly troublesome to beneficiaries in terms of red tape, paper work and delays.

Illustrative cases where individuals, groups of individuals, or corporate entities have benefited from several natural resource programs, including those offered by provincial governments, and where:

the programs are complementary; and
the programs involve substantial duplication or overlap.

Cases where programs could be delivered more efficiently by private sector organizations.

Approaches used by other countries (e.g., EEC and OECD countries, especially the U.S., Great Britain and Norway) for the delivery of programs such as those covered by the review.

## Composition of the Study Team

The study will be led by a private sector executive, who will be appointed in consultation with the departments most affected by the program assessment. The team director will report to both the Public Sector Adviser and the Private Sector Liaison Adviser serving the Chairman of the Task Force. The director will be supported by a seconded government officer and a matching number of private sector representatives nominated through the Private Sector Advisory Committee. The team, or its director, shall meet with Private Sector Liaison Advisers at their request.

## Work Program

In view of the multiplicity of programs that fall within the general category of natural resources, it will be desirable to assign specific tasks to sub-teams dealing with specific subjects. To this end, the study team will submit for consideration by the Ministerial Task Force a detailed workplan showing what sub-teams will be organized for the purpose.

The study team will have access to any evaluations or evaluative tools departments have with respect to programs covered by this review.

## Reporting Schedule

The study team is requested to report its initial findings to the Ministerial Task Force on or before June 29, and a final report by September 11, 1985. In addition, the Task Force will receive brief progress reports on the work of this and other study teams at all regular meetings.

## Communications with Departments

Ministers of those departments directly affected by this review will be advised which programs under their jurisdiction will be included.

## NATURAL RESOURCE PROGRAMS

| DEPT. | PN | TITLE |
|---|---|---|
| AGC | 401 | Forest Biomass Research (Energy from the Forest - ENFOR -) |
| AGC | 402 | National Forestry Statistics (FORSTATS) |
| AGC | 404 | Canada/Nova Scotia Forest Resource Development Agreement (1982-87) |
| AGC | 405 | Canada/PEI Forest Resource Development Agreement (1983-88) |
| AGC | 406 | Canadian Interagency Forest Fire Centre |
| AGC | 407 | Canada/Newfoundland Subsidiary Agreement on Forestry (1981/86) |
| AGC | 408 | Canada/New Brunswick Forestry Development Agreement (1979-84) |
| AGC | 409 | Canada/Quebec Forest Development Agreement (1985-90) |
| AGC | 410 | Canada/Ontario Forest Resource Development Agreement (1984-89) |
| AGC | 411 | Canada/British Columbia Forest Resource Development Agreement (1985-90) |
| AGC | 412 | Canada/New Brunswick Forest Renewal Subsidiary Agreement (1984-89) |
| AGC | 413 | Canada/Gaspé Lower St. Lawrence Economic Development Plan - Forest Development Program (1983/88) |
| AGC | 414 | Canada/Ontario Forest Development Subsidiary Agreement (1979/84) |
| AGC | 415 | Canada/Manitoba Forest Renewal Agreement (1984/89) |
| AGC | 416 | Canada/Saskatchewan Forest Resource Development Agreement (1984/89) |
| AGC | 416 | Canada/Saskatchewan Forest Resource Development Agreement (1984/89) |
| AGC | 417 | Canada/Alberta Forest Resource Development Agreement (1984/89) |
| AGC | 418 | Program for Research by Universities in Forestry (1983/86) |
| EMR | 54 | Forest Industry Renewable Energy Program |
| EMR | 101 | R&D Services - CANMET - |
| EMR | 302 | Mineral Development Agreement |
| EMR | 902 | Minerals Technology: Standards & Specifications - Note: EMRC 302 and 902 are reviewed assessment 0<br>EMR* Geological Survey of Canada<br>EMR* Mineral Policy Sector |
| F&O | 1 | Fisheries Prices Support Board (FPSB) |

| | | |
|---|---|---|
| F&O | 2 | Fisheries Improvement Loans |
| F&O | 3 | Fishing Vessel Insurance Program |
| F&O | 4 | Fishing Vessel Assistance Plan |
| F&O | 5 | Newfoundland Bait Program |
| F&O | 6 | Aquaculture |
| F&O | 7 | Fish Inspection Program |
| F&O | 11 | Fisheries Marketing |
| F&O | 13 | Scientific Information and Publications |
| F&O | 15 | Fisheries Statistics and Analysis |
| F&O | 16 | Salmonid Enhancement Program |
| F&O | 17 | Observe, Record, Report Program/British Columbia |
| F&O | 20 | Can. & Nfld. Agreement Re: The Restructuring of the Newfoundland Fishery |
| F&O | 102 | Fishing Times & Areas/B.C. Sport Fishing Information |
| F&O | 902 | Foreign Fishing Regulation |
| F&O | 903 | Quality Improvement |
| F&O | 904 | Sports Fishery |
| F&O | * | Small Craft Harbours |
| F&O | * | Atlantic Fisheries Development Program |
| F&O | * | E.R.D.A. Fisheries Subsidiary Agreement |
| F&O | * | Fisheries Resource Assessment & Research |
| F&O | * | Fisheries Licensing & Allocation |
| F&O | * | Fisheries Regulations & Enforcement |
| FIN-TEC | 3 | Investment Tax Credit |
| FIN-TEC | 4 | Total Accelerated Depreciation |
| FIN-TEC | 6 | Resource Sector - Excluding Energy - |
| FIN-TEC | * | Income Tax Review |
| INAC | 76 | Major Northern Resource-Based Industrial Development Projects |
| INAC | 79 | Non-Renewable Resources, Yukon Region |
| INAC | 80 | Non-Renewable Resources, Northwest Territories Region |
| INAC | 225 | Headquarters Northern Mineral Resources |

Note: INAC 79, 80 & 225 are reviewed as one program

| | | |
|---|---|---|
| INAC | 81 | Canada/NWT Economic Development Agreement |
| INAC | 87 | Manitoba Northern Flood Agreement |
| INAC | 89 | Forest Fire Agreement |
| INAC | 91 | Renewable Natual Resources Development Agreement with Ontario |

| | | |
|---|---|---|
| INAC | 120 | Canada/NWT Subsidiary Agreement on Natural Resources Development |
| INAC | 121 | Canada/Yukon Economic Development Agreement |
| INAC | 122 | Canada/Nanisivik Mines Ltd. Agreement |
| INAC | 201 | Yukon & NWT Land Forest & Water Resources Management |
| INAC | 303 | Resource Development Impacts Program |
| INAC | 307 | Indian National Resources and Trust Funds |
| INAC | * | The EDA context |

*Added or restated by the study team; these are not individual programs as such.

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In the current world economic crisis, Canada stands at a crossroad.

To the south the U.S.A., to the north the U.S.S.R., to the east the European Common Market, and to the west the emerging Asia Pacific region. Thus, we have within our grasp the four most important markets in the world for our products - but only if we make a concerted effort to shape a role for Canada as an enterprising, reliable and competitive exporter to these markets.

Nothing gives us more promise to achieve this than our resource-based industries. If we miss the opportunity we risk the very real danger of falling behind our competitors and jeopardizing the standard of living we enjoy. If we succeed, as we should, we can once again regain our pride, prestige and prosperity.

This situation is graphically described by the Chinese symbol for "CRISIS" which consists of two components: the top character signifies "DANGER"; the bottom character signifies "OPPORTUNITY". Which one it will be for Canada depends on our resolve and our actions in a changing world.

# MAIN OVERVIEW

## FROM CRISIS TO OPPORTUNITY

We are a trading nation. A nation built out of rock, timber, and the bounty of the sea.

Trade is of critical importance to our economy. More than 30 per cent of our income and employment comes from exports. This is a higher percentage than for the U.S.A., Japan or West Germany.

Natural resource industries are major export contributors. In 1984, these industries contributed $1,121.3 million (fisheries), $13,979.1 million (forestry) and $7,869.4 million (minerals) towards a trade surplus of $16,271.7 million. By comparison, motor vehicles and motor vehicle parts/accessories combined contributed only $3,290.0 million. (See Table 1).

### The Past

For years, we had only to take our wares to market. Following the Second World War, when markets expanded in the U.S., Europe and Japan, we rapidly became one of the world's largest exporters of natural resources. As a result of this post-war boom, Canada's resource industries became a dynamic engine of growth for the economy and produced new wealth to pay for expanded social programs.

Then came the mid-70s. Development of our natural resources began to slow down. By 1980, our position as a trading nation had declined from fourth in the world to eighth.

The extension of exclusive fishing zones in 1977 led to growth in Canadian output without any significant reduction in foreign production. We had more fish to sell in more fiercely competitive markets. Higher international volumes, lower prices, and a labyrinth of government assistance programs and regulations arrested the ability of the Canadian fisheries to adapt to market forces and undermined its competitiveness.

The forest industry also suffered a sharp downturn. Wood shortages emerged and international markets became more competitive and restrictive. The industry's share of total

Canadian exports dropped from 26 per cent in 1971 to 14.8 per cent in 1983.

In the minerals and metals markets, we faced increased output from developing nations, international overcapacity, a sharp decline in most metal prices, and the high cost of capital. The mining share of GDP, which had peaked at 2.2% in the early 1970s, dropped to .95% in 1982 and mine exports, which represented about 6% of total exports, fell to an average of 3.5% in the 1980s.

## The Present

Today, it is no longer enough to take our products to market. We must become efficient producers and astute traders if we are to maintain and improve our standard of living. We must become market-directed and export-driven.

### Fisheries

Canada now ranks fifth in the world in fish landings, at 1.4 million tonnes, ninth in production value, and is one of the largest exporters in the world. Exports represent 80 per cent of production, with approximately 50 per cent going to the U.S.A. Other key markets are Japan ($233 million) and the EEC ($213 million).

The industry is a major employer, often in areas with limited alternative employment. Of the 1,400 fishing communities in Atlantic Canada, roughly half are single sector economies with fishing and fish plant employment occupying 30 per cent or more of the labour force. In 1983, approximately 111,000 people were employed in the fisheries industry. This included 81,000 registered fishermen and 30,000 plant workers. The Atlantic region had 84,000 people employed in the fishing industry, the Pacific 19,000, and the Inland region approximately 8,000. (Table 3).

The potential of the fishing industry to sustain such high levels of employment, on the longer term, is questionable. The primary and secondary sectors of the fishery can move towards improved profitability, adequate income, and stable employment. New employment can only be expected in processing and new product development.

The extension of Canada's exclusive fishing zone in 1977 increased Canadian landings without significantly reducing the foreign fishing effort. Extensive government regulatory and support programs were put in place to maintain employment, and distribute fishing and processing effort as widely as possible. The net result was federal expenditures of one billion dollars in each year for a two billion dollar industry, threats of "countervail" from the U.S., and a general inability of the industry to adopt new technology and adapt more efficiently to cyclical international markets.

The fishing industry is in crisis. Selling larger quantities of fish will no longer suffice. There are limits to how much we can increase our catch without seriously damaging future stocks. Our fisheries sector must become leaner, more efficient, and more effective in marketing available supply.

## Forestry

Forestry is the largest contributor to Canada's positive trade balance and a crucial source of foreign exchange earnings. Forestry exports totalled $15.8 billion in 1984. Imports were about $1.8 billion, resulting in a positive trade balance of approximately $14 billion. (See Table 1).

The total value of shipments of forest products was close to $24 billion in 1983, and accounted for 14.7 per cent of all manufactured goods.

Forestry is one of Canada's largest employers. Surveys show that each direct job results in two indirect jobs elsewhere in the economy. In 1983, some 780,000 Canadians were dependent, directly or indirectly, on the forest sector for employment. This represents close to one in 10 Canadian jobs. Direct employment, in 1983, was approximately 260,000, down from a pre-recession high of 292,000. It is estimated that some 300 communities derive their sole livelihood from the forest sector.

Forestry is also one of Canada's most important economic sectors but it is beset by serious problems. Between 1971 and 1980, forestry had exhibited the fastest growth in output of all resource sectors. The downturn came in 1981 and it was severe: forest exports dropped sharply and sector employment showed a rate of decline surpassed only by the leather, textile, and knitting mill sectors.

Present conditions are not favourable for ensuring Canada's continued competitiveness in foreign products. Most of the country's readily accessible timber has been harvested, requiring movement to more remote areas where quality is lower and costs are higher. Management of federal lands has been poor. Industry has no financial incentive to engage in large-scale reforestation. Provinces are reluctant to raise royalties to support reforestation. Reforestation programs have failed to produce adequate stocks of timber. The situation is critical, in the view of the study team.

With proper management the forest sector offers potential for more growth, increased wealth, foreign exchange, employment, tax revenues, and regional economic activity. Sector requirements include substantial forest renewal programs, market strategies, and better focused research. It is the opinion of the study team that government subsidies and unrealistic employment expectations should be avoided.

Cutting and shipping will no longer suffice. Strong cooperative measures will have to be taken by industry and governments. The federal government in particular will have to play a strong leadership role in the development of cooperative reforestation programs because of the current crisis.

## Minerals and Metals

Canada is the third largest producer of minerals and metals in the world, and ranks among the first six countries in production of nickel, zinc, asbestos, potash, molybdenum, sulphur, gypsum, silver, platinum, gold, copper, lead, aluminium and iron ore. In this context, the North is of particular importance. In 1983, northern mines produced 23 per cent of the zinc, 27 per cent of the lead, 17.2 per cent of the gold, 6.2 per cent of the silver and 96.9 per cent of the tungsten in Canada.

In 1983, this sector accounted for approximately $21 billion in output and employed about 160,000 persons. Downstream activities, such as shaping and fabricating of minerals and metals accounted for an additional $20 billion in output and 235,000 jobs.

Canada is the largest international trader of minerals and metals and an important net earner of foreign exchange for the economy. The value of exports in 1984 exceeded imports by more than $7.8 billion with the majority of exports going to the U.S.A. (60 per cent), the EEC (nine per cent), and Japan (eight per cent).

Problems in this sector are not as severe as in the forestry and fisheries sectors. The mining industry has cut costs and increased productivity. However, it still faces important obstacles such as stiffer competition in world markets because of the entry of Third World countries with rich ore bodies, lower wages and devalued currency; generally depressed prices; international oversupply; and, at home, increased import penetration and the threat of new materials for manufacturing.

The reliance of isolated communities on the minerals and mining sector for employment also creates problems because employment in mining has always been unstable.

Mineral potential is substantial, but the current international situation does not support an optimistic view of a return to high prices and buoyant cash flows. Competitive mining will require exploitation of richer ore bodies with favourable mining and concentrate characteristics; proximity to tidewater or basic infrastructure support; and technological breakthroughs to reduce costs of mining, smelting, and refining. Costs imposed on the industry by governments, such as export permits and environmental compliance costs, will have important implications. In the North, a stable long-term approach to regulations and northern (taxation) benefits is also required.

Finally, all decisions to mine, smelt, or refine will have to be based on knowledge of realistic opportunities in international and domestic markets and awareness of conditions, such as tariff and non-tariff barriers or direct subsidies, which could hinder exploitation of markets.

Exploring, digging, and shipping will no longer suffice. In the view of the study team we must strengthen this export-oriented industry with better marketing. This will mean assumption of increased responsibility by the provinces, who have primary responsibility, and industry, and strong market and export-oriented leadership by the federal government.

## The Future

"Canada is a land of the future. It has always been, and it will always be a land of the future".* This prediction will come true, if we fail to turn the current crisis into opportunity.

It is no longer enough to catch, cut, and dig our way to wealth. We must become astute and competitive traders, capable of developing new markets for our products and new products for existing markets. We must develop a technological basis for increased productivity and use our natural resources to develop strong secondary industries in all these sectors.

Courage and inventiveness are needed to accomplish this goal. In the study team's view we need courage to remove those social safety nets which sap entrepreneurial vitality and hinder competitive trading. We need inventiveness to direct energies to product development, processing, and related services. We need to become export-driven, in terms of volume and efficient production of higher quality goods.

It is the study team's opinion that changes in federal programs will be required. Economic, taxation, and administrative policies will need to be reoriented to provide sufficient long-term stability to stimulate trade and to convince Canadians to invest rather than save. Canada's income tax system must be competitive with the tax systems of other nations, in order to attract and maintain investment in natural resource industries, and to ensure that these industries are not placed at a competitive disadvantage when compared to similar businesses being carried out in other jurisdictions. The income tax system should also remain stable over time so as not to inhibit economic activity. Proposals included in the May 23, 1985 Budget should, if introduced, be handled in such a way as to minimize any sudden changes affecting the resource sector and be directed towards wealth creation rather than wealth distribution.

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* Comment from a review by a Swiss bank on world investment opportunities.

## Focus

Most successful companies have clear focus and clear objectives. Otis Elevators'statement of purpose "to move people rapidly over short distances both horizontally and vertically" is a model of clarity and precision. Federal departments are, in contrast, expected to do their jobs with open-ended and conflicting objectives. This problem is not so much one of bureaucracy as an accumulation of numerous political objectives over time.

Focus begins with the Constitution. The federal government has jurisdiction over interprovincial and international trade and statistics; the provinces generally own the natural resources within their borders and control exploration, development, conservation and primary production of these resources. Exceptions involve specific federal responsibilities over common-property fisheries, national parks, Crown lands north of 60°, Indian reserves, and uranium mining.

There would be no substantial role for the federal government in mining and forestry if it were not for its international trade responsibility. This trade responsibility is critical, given our dependence on exports.

In the view of the study team, strong federal leadership is required to integrate fragmented efforts into a national export-directed effort. This should be based on a sound resource data base and an assessment of investment, employment, and market potential of various resource sectors.

Federal departments with their multiple and conflicting objectives are ill-equipped to provide this trade-oriented leadership. They generally lack national policy direction. Specialists are spread across too many departments, as is the case, for example, with marketing specialists located in sectoral departments, External Affairs and the Department of Regional Industrial Expansion.

Federal funding is sometimes out of proportion with the relative economic importance of a sector, the study team has concluded. The Department of Agriculture's budget in 1985/86 for a $20 billion business is $1.5 billion, with 11,947 person-years. By contrast, the Canadian Forestry Service's budget for a $30 billion industry is $175 million with 1,286 person-years. (See Table 4).

Focus of federal efforts and resources will require acceptance of export drive as the motivating force and:

Development, under the leadership of sector departments, of national sectoral policies for mining and fisheries, similar to the 1981 "Forest Sector Strategy for Canada". These policies must be based on sound data, identify national policy objectives and define the roles of federal and provincial governments in relation to industry.

Development under the leadership of sector departments, of domestic and international market strategies for specific sectors and commodity products, based on solid market information.

Making sure that sector departments responsible for natural resources can provide "one-stop" shops. They must have the structure appropriate for this role; this is not now the case for Forestry or for Minerals and Metals. Whether or not Forestry remains with Agriculture or joins Energy, Mines and Resources is not critical; what is critical is the structure within the two departments.

Focusing sector department activities on clear, trade-related goals which include providing market information to the industry.

Focusing research and federal-provincial Economic and Regional Development Agreement (ERDA) efforts towards areas of greatest economic potential, based on market research.

Integrating northern development into national policy and regional development programs which are managed by sector departments and the Department of Regional Industrial Expansion.

Devolving increased responsibilities for regulation and administration of natural resources north of 60° to the territorial governments.

Focusing activities of the Department of Indian Affairs and Northern Development primarily on its responsibilities for Native people, and developing organizational structures and procedures for resource development on Indian reserves which will utilize expertise available in sector departments and the private sector.

This study team agrees with previous study team reports which identified overlap, duplication, and ineffectiveness in the delivery of international and domestic marketing and trade services. The team also concluded that sector departments are in the best position to provide "one-stop" market information to their respective resource industries. Industry has a fear that DRIE'S responsibilities for regional development may lead that Department to making decisions which are not based on business considerations.

In the opinion of the study team, the remaining trade functions should also be streamlined and made more responsive to industry. These services have a major impact on export-oriented natural resource industries as well as on other industrial sectors. Consideration should be given to a variety of alternatives, such as the Minister for International Trade's recent proposals, business suggestions for privatization of Trade Commissioner services, and the possibility of reintroducing a structure similar to that which previously existed under the Department of Trade and Commerce. The Prime Minister may, in addition, wish to consider assigning regional development responsibilities to a different department so as to facilitate resolution of potential conflicts between regional development and industrial and trade objectives.

## National Efficiency and Coordination

Making our natural resource industries viable will require a more efficient distribution of roles and responsibilities. The main question is: who can perform the necessary tasks most efficiently? Governments and industry have different contributions to make. Capability and benefits vary from province to province and company to company. It is therefore essential, in the development of the trade-oriented focus outlined above, to distinguish activities which can be done most efficiently on a cooperative national basis, from those which should be handled regionally by an individual province or industry. Funding responsibilities should be clearly differentiated in the development of cooperative programs, especially in the development of reforestation programs.

The study team felt that industry should be more directly involved in the funding, priorization, and management of federal programs from which they stand to benefit. Measures suggested to the Task Force for consideration by the government include:

> Strengthening industry's input into federal research efforts by creating operations management committees with strong industry representation, and by significantly increasing private sector funding and cost-recovery.
>
> Developing effective technology-diffusion and staff exchange programs between industry and universities.
>
> Increasing industry involvement in the selection of projects for inclusion under future ERDA sub-agreements.
>
> Strengthening industry responsibility for conservation, protection of natural resources, and self-regulation, particularly insofar as over-exploitation and upgrading are concerned, so as to reduce costs to industry of compliance with government regulations and enforcement.

Provinces, particularly in sectors such as forestry and mining, would play a stronger role in the determination of national priorities and the provision of services best handled on a regional basis.

## Realistic Expectations

Realism requires a link between what we are willing to invest in a particular sector and the economic returns which we expect to derive from that sector. In this context, the study team made suggestions which, if implemented, could save millions of dollars. However, maximum savings and gains will be realized only if there is political will to focus the tasks of departments towards specific and realistic goals. Our suggestion is that export-drive and federal trade responsibilities could serve as the basis for such goals. Programs that do not contribute to the attainment of objectives can then be identified, eliminated, or transferred to other departments with appropriate objectives.

Subsidies and job support requirements dig into our wealth and weaken our ability to adopt new technology or to adjust to cyclical, international markets. Efforts to create viable industries are dissipated by attempts to maintain jobs primarily as entry points to social welfare systems. Making resource industries viable will, in some cases, entail displacement of employees and capital and will have a negative impact on some single-sector resource communities, particularly in Atlantic fishing communities. It is therefore essential, in the view of the study team, that federal and provincial governments recognize this fact and address the social implications at the same time as the recommendations are implemented and social safety nets and subsidies are removed. In this context, our success in re-training and placing veterans after the Second World War should inspire us. We should also consider guarantees of minimum income.

In addition to options included in the program assessments, the study team suggests that consideration be given to:

> Requesting the Minister of Employment and Immigration and the Minister of Regional Industrial Expansion to assess regional and employment implications of specific options and report to Cabinet, in collaboration with appropriate sectoral ministers, on ways to deal with the social implications of suggestions included in this report.
>
> Transferring responsibility for the social aspects of programs now included under sector departments to the Department of Employment and Immmigration.
>
> Including in the recently announced study of Unemployment Insurance, a review of the effects the current system has on the natural resources sector in terms of long-term employment, labour mobility, conservation, and economic efficiency.

Natural resources can become once again the driving force of the Canadian economy. They can provide us with the wealth we need to maintain and improve our standard of living. We must, however, take care that we do not kill the goose that lays this golden egg with excessive social burdens, the study team believes.

Success in implementing the proposals included in this report will require consideration of the reports of other Study Teams, and the development of a cohesive approach to re-direction of federal programs. Implementation will also require galvanizing political will and public support.

## And Generations to Come

We are a trading nation. A nation which prides itself on its people and its resources. To produce efficiently and trade astutely is to provide for the future. We must ensure that our fish stocks flourish, our forests are replenished, and our minerals are exploited with an eye to providing greater income and employment opportunities for Canadians both today and in the future. We must achieve this in a humane, caring way with thought and consideration given especially to our youth.

We must become a land of the present as well as a land of the future by turning crisis into opportunity.

Table 1

## CANADA'S NATURAL RESOURCES: SELECTED STATISTICS

### Contribution to Canada's Exports and Trade Balance

($ millions)

| Sector | 1984<br>Exports | <br>Imports | <br>Trade Balance |
|---|---|---|---|
| CANADA | 112,113.5 | 95,842.4 | 16,271.1 |
| Agriculture | 10,853.0 | 5,003.1 | 5,849.9 |
| Energy | 14,046.2 | 5,046.3 | 8,999.9 |
| **Minerals** | 13,527.9 | 5,658.5 | 7,869.4 |
| **Fisheries** | 1,684.1 | 562.8 | 1,121.3 |
| **Forestry** | 15,828.4 | 1,849.3 | 13,979.1 |
| Motor Vehicles, Parts, Accessories | 29,797.7 | 26,507.7 | 3,290.0 |

**Source: Commodity Trade by Sector, DRIE, 1985**

Table 2

## CANADA'S NATURAL RESOURCES: SELECTED STATISTICS

### Contribution to Gross Domestic Product

| | 1982 | | 1983 | |
|---|---|---|---|---|
| | Gross Domestic Product (1) $millions | % | Gross Domestic Product (2) $millions | % |
| CANADA | 319,057.0 | | 351,039.4 | - |
| Agriculture | 9,992.2 | 3.1 | 18,655.9 | 5.3 |
| Energy (3) | 27,909.2 | 8.7 | 32,978.9 | 9.4 |
| **Minerals** (4) | 9,365.2 | 2.9 | 10,344.5 | 2.9 |
| **Fisheries** | 652.4 | 0.2 | 1,329.6 | 0.4 |
| **Forestry** (5) | 9,471.6 | 3.0 | 11,418.5 | 3.3 |

**Source: Statistics Canada; Energy, Mines & Resources; Fisheries and Oceans and the Department of Finance.**

**Additional Notes**

(1) Gross Domestic Product by Industry, Statistics Canada Catalogue 61-213 (annual).
(2) Statistics Canada, National Income and Expenditure Accounts - Calculated on a corporate basis rather than establishment basis as was done for 1982, but difference is negligible.
(3) Energy GDP includes: mineral fuels (excluding coal), petroleum and coal products manufacturing industries; pipeline transport, electric power, gas distribution, and the wholesaling of petroleum products.
(4) Minerals GDP includes non-metallic mines and mineral fuels, excludes electric power and gas distribution.
(5) Forestry GDP includes only the primary industry.

Table 3

### CANADA'S NATURAL RESOURCES: SELECTED STATISTICS

### Contribution to Employment

| | 1982 | | 1983 | |
|---|---|---|---|---|
| | # | % | # | % |
| CANADA | 10,644,000 | | 10,734,000 | |
| Agriculture | 462,000 | 4.3 | 476,000 | 4.4 |
| Energy | 31,699 | 0.3 | 33,418 | 0.3 |
| **Minerals** | 147,931 | 1.4 | 159,765 | 1.5 |
| **Fisheries** | 103,000 | 1.0 | 111,000 | 1.0 |
| **Forestry** | 260,102 | 2.4 | 258,000 | 2.4 |

**Source: Historical Labour Force Statistics, Statistics Canada Catalogue 71-201 (annual); and Employment, Earnings and Hours, Statistics Canada, Catalogue 72-002 (monthly).**

Table 4

## CANADA'S NATURAL RESOURCES: SELECTED STATISTICS

### Expenditures by Federal Departments

### 1985/86 Main Estimates

| Department | Expenditures ($ millions) | Person-Years | Value of Resource ($ millions) |
|---|---|---|---|
| Forestry | 175 | 1,286 | 30,000 |
| Fisheries(1) | 506 | 4,964 | 2,000 |
| Minerals/Mining | 334 | 3,208 | 40,000 |
| Agriculture | 1,500 | 11,947 | 20,000 |

1) Fisheries and Oceans total - $629 million, 6,353 person-years.

## FISHERIES OVERVIEW

### Summary

Only a small minority of fishermen in Canada earns a good living from fishing, whereas the large majority's insufficient income is supplemented by an elaborate system of social safety nets and assistance programs. In the view of the study team, the result is:

a. an industry which is inefficient and not economically viable in many areas of Canada;

b. total government expenditures which approach one billion dollars per annum to regulate and support an industry whose total value of production (F.O.B. plant) is only about two billion dollars; and

c. what is perhaps more serious, the overregulation of the viable part of the industry (to protect the less efficient segments) thereby seriously hampering its potential profitability and export competitiveness; and finally

d. the very strong possibility of U.S. countervail duties on fish products.

This untenable situation is most obvious to the Department of Fisheries and Oceans (DFO). This department wants to be a department of fisheries, not a department of social welfare or employment. Unfortunately, circumstances have driven the department into this realm of conflicting objectives. Its primary mandate of protecting the fisheries resource and maintaining a viable fishing industry is being dissipated by the numerous socio-economic burdens placed on it. An example of this is the recent announcement by the Minister of Fisheries extending the crab season in the Gulf of St. Lawrence after the biologically established quota had been caught, simply to allow crab plant workers to become eligible for unemployment insurance benefits.

The fishing industry of Canada can become profitable, not require extensive government assistance and be a net contributor to the national economy, but only if it is not burdened with the need to maximize jobs and provide an entry to the social welfare system. The problem of unemployment and low incomes in many parts of coastal Canada must be dealt with through other programs and departments. Such a change however, will require a strong political will! Change must be initiated or all fishermen will eventually become welfare recipients, the study team believes.

### Jurisdiction

The common property fisheries resources of Canada are under federal jurisdiction unlike other natural resource sectors studied by this team. Federal jurisdiction is in accordance with the British North America Act of 1867 and the Canadian Constitution of 1982.

Management of the fisheries resources in inland waters has been delegated to most provinces with the exception of Newfoundland and the Maritime provinces.

### Authority

Authority for federal involvement in the fisheries flows from a series of acts including the Fisheries Act, the Coastal Fisheries Protection Act, the Territorial Sea and Fishing Zones Act, the Fisheries Prices Support Act, and the Fish Inspection Act.

Originally, the Fisheries Act defined the Minister's responsibility to protect and enhance fish stocks. Over recent years, the DFO has extended this mandate to include managing the fisheries for a series of social objectives, (employment, income, regional development). Some of these initiatives have been successfully challenged in the courts. In response, a new Fisheries Act has been passed, Bill C-32, which defines the Minister's primary responsibility as managing for conservation of stocks, but also authorizes socio-economic initiatives. The study team considers this expanded mandate most undesirable.

### Environment of the Fishery

Canada is ranked fifth in the world in volume of landings at 1.4 million tonnes, ninth in production value and first in export value at $1.7 billion Canadian in 1982. Exports represent 80% of production.

The commercial fishing industry consists of 81,000 full- and part-time fishermen operating 42,000 registered vessels, and approximately 990 fish processing plants which employ 28,000 processing workers. In total, the industry provides in excess of 100,000 direct jobs. The dockside value of fish landings in 1982 was $887 million and the resulting market value of processed fish products (F.O.B. plant) amounted to $2.02 billion. Approximately 50% of the production ($1.05 billion) went to the U.S. Other key markets were Japan ($233 million) and the EEC ($213 million). In addition to the commercial fishery, this resource provides an important stimulus to tourism. In 1980, the recreational fishery was enjoyed by 5.9 million anglers with direct expenditures of $1.7 billion. Sport fishing is part of the Canadian way of life and culturally important to Native people.

The commercial industry is particularly important to the coastal and northern areas of Canada due to the limited alternate sources of employment. In the Atlantic provinces,for example, there are 1,400 fishing communities of which half are single sector economies with fishing and fish plant employment occupying 30% or more of the labour force.

Prior to Canada's declaration of a 200-mile economic zone in 1977, fish stocks were in serious decline due to over-fishing. Since 1977, fisheries management policy and programs have lead to significant increases in some stocks (cod), stabilization of others (crab) while some have continued to decline (salmon, herring).

Most fish stocks are now considered to be at or near their biological sustainable yields, and future economic gains must come from receiving greater value for a fixed volume of fish, through more efficient harvesting and plant operations, greater value added, or real market price increases.

Since fish resources are a common property resource, individual participants, in an effort to maximize their returns, increased capacity in both the harvesting and processing sectors. This action was aided and abetted by both levels of government, in spite of limits on the number of fishing vessel licences being gradually imposed by DFO during the 1970s. The result is universal overcapacity: too many vessels, overcapacity in plants, and too many participants for the size of the resource base.

Through this period the DFO greatly expanded its orientation to socio-economic objectives, in addition to its efforts to conserve stocks. A myriad of regulations aimed at allocating stocks by geographic sectors, boat size and gear types were put in place. The operation of this regulatory system (see Fisheries Management Assessment) in 1984 required 2,882 PYs and cost $236 million.

In spite of this regulatory activity fishermen's incomes and processing sector profitability vary widely. For example, in 1980, average net incomes of full-time fishermen varied from $5,000 in northeastern Newfoundland to $29,000 in southwestern Nova Scotia, and reached $50,000 in British Columbia. Average incomes also vary with boat size. In Atlantic Canada, for example, in 1980, fishermen on very small boats (under 26 ft.) had average incomes of $5,000 while average incomes of fishermen on medium vessels (50-65 ft.) were $40,000.

The government chose through this period to extend unemployment insurance benefits to fishermen, in spite of the fact they are independent businessmen and that incomes varied widely. In addition, persons employed in the fishery qualify for full benefits after only 10 weeks of work. There is now some concern that the unemployment insurance system discourages longer term employment and labour mobility, and that fisheries management is increasingly becoming oriented towards maximizing jobs, even at the risk of conservation goals or economic efficiency. The recently announced study of unemployment insurance should examine this matter.

Due to the strong social orientation of the fisheries,the concept of "business failure" at both the harvesting or processing level has been resisted by governments. Instead, regulatory actions attempt to limit competition and protect the inefficient. Since average economic returns to participants continue to be considered low, regardless of the regulatory structure, government has also provided financial support through a variety of assistance programs, grants, and services described in the body of this report.

Despite the complex and costly regulatory structure, and despite government intervention and services, many fisheries enterprises continued to encounter financial difficulties. Possibly as a final solution, the previous government then started a gradual process of nationalization in the fishing industry. This began with the establishment of several Crown corporations, such as the Canadian Saltfish Corp., which has monopoly marketing powers in specified areas. Then most recently, as a result of the restructuring of the Atlantic offshore groundfish industry, the federal government acquired a minority equity share of National Sea Products, majority control of Fisheries Products International, and full ownership of Pecheries Cartier. Privately-owned companies particularly fear the latter two government-controlled companies, since they are viewed as competitors who don't have to show a profit and who have an endless source of financing. Such government-owned companies are presently viewed as major disincentives to private sector investment in the Atlantic fishing industry.

If the various industry services and assistance programs are added to the management costs previously identified, the total costs incurred by the fisheries section of DFO were $651 million and 4,232 PYs in 1984 (see Appendix I). In addition, other federal departments have expenditures not reviewed by the study team including Employment and Immigration (training, unemployment insurance) DRIE, International Trade, MOT, etc. These costs, as well as provincial government expenditures, are such that total government expenditures are estimated to be $1 billion per annum for a resource which generates gross revenue of $880 million at the primary level, or $2.02 billion F.O.B.plant.

The fishing industry has been under investigation several times by U.S. trade authorities. These investigations were initiated by the U.S. industry which repeatedly claims that the Canadian fishing industry is highly subsidized by government and is thereby an unfair competitor. Anti-dumping duties were recently imposed on saltfish and the U.S. industry has filed for countervailing duties on fresh Canadian groundfish, citing as subsidies to the industry many of the programs reviewed by the study team, as well as other programs such as Unemployment Insurance. These initiatives have resulted in many instances from an attempt to maximize employment in the fishery. If this action is successful, duties will also be sought on other Canadian fish products and could result in the loss of markets for Canadian fish.

## A Strategy for Industry

In spite of numerous Royal Commissions, Task Forces, studies of the Canadian fishery, and government programs which have been ongoing since the turn of the century, the industry continues to experience the inevitable ups and downs of any commodity. The large government expenditures and a substantial bureaucracy to administer a series of programs aimed at smoothing out the cycles, or lessening their impact on participants, have been by and large ineffective and in most instances counter-productive.

Some sectors of the industry are efficient and profitable and capable of functioning without government assistance. All sectors can move towards providing stable employment, adequate incomes, improved profitability, and increased tax revenues, if the industry is not burdened with the cost and inefficiencies of social objectives and overregulation. In the opinion of the study team, only the fish, efficiently harvested and processed, can create jobs and wealth; government activities, beyond the primary mandate of protecting and enhancing fish stocks, are largely wasted. An artificially large employment factor and unnecessarily large capital investment in vessels and plants, dissipates total economic returns and reduces the international competitiveness of Canadian products.

High quality products with lower production costs are being provided to the market by technologically advanced, industrialized competitors. Canada cannot afford to fall behind in a competitive international marketplace.

The industry must also shift from being employment and supply driven to being market driven. The traditional process of fishing whatever could be caught, and then trying to sell the resulting products no longer works in today's international marketplace.

The primary and secondary sectors of the industry have to recognize that failure to adapt to market signals can lead to business failure. It must be clearly recognized that much of the regulatory effort and government intervention in the industry are there to protect the least efficient. Failure to recognize this basic thrust could negate the benefits of the study team's proposals. Program recommendations by the study team reflect elimination of assistance programs and less government involvement, leading to a stronger industry.

The government cannot at the same time be the protector and allocator of the resource, the regulator of the industry and a direct participant through ownership of all or part of fisheries businesses. This is a formula to discourage private sector investment in the fishery and a sure way of destroying the economic potential of this important Canadian resource.

**A Strategy for the DFO**

In the opinion of the study team, the current budget and size for the "fisheries" component of DFO should be reduced to reflect a more reasonable amount relative to the value of the resource.

As was previously stated:

a. Total expenditures related to the fisheries by all governments and departments approach one billion dollars per annum for an industry whose total value of production (F.O.B. plant) is only about two billion dollars.

b. Total expenditures by DFO on fisheries programs in 1984 amounted to $651 million and 4,232 PYs.

c. DFO's major program relates to protecting and managing the resource. Expenditures on this one program amounted to $236 million and 2,882 PYs to manage a resource with a landed value in the order of $880 million per annum.

d. Since a large portion of the 81,000 fishermen are part-time, this can be equated to not more than 30,000 fishing PYs. Just managing this fisheries resource therefore requires about one federal PY for every 10 PYs actually fishing.

The fisheries component of the department should narrow its primary mandate and focus on:

a. Conservation and enhancement of the natural fisheries resource in the wild.

b. Basic inspection services to the benefit of fish consumers while leaving quality control to the private sector.

c. Basic infrastructure such as wharves, breakwaters and dredging.

d. Marketing activities directed to export and trade needs.

The size of the department should then be reduced in order to redress the following:

a. The growth in departmental resources during the past decade in areas other than DFO's prime mandate of protecting the resource.

b. The growth of Ottawa headquarters relative to the regions. (Now approximately 800 PYs).

c. Regional organizational structures and overheads based on the premise of decentralization, when in reality most important operational and enforcement decisions are still made in Ottawa.

In any supply-demand situation, price is the moderator of demand. The department has not put a price on many of its services, thus stimulating an insatiable demand. The study team has suggested, where appropriate, a fair pricing of government services.

The study team has reviewed each program to determine whether its implementation could be better achieved within the existing line department, or through a functionally oriented department such as DRIE or External Affairs. Without exception it feels that government policy and services can best be provided to industry through a strong line department, and does not support the dissipation of the fisheries mandate to other government agencies. Resources in other departments dealing exclusively with the fisheries should be reviewed for possible duplication of effort and subsequent reduction. Marketing, as opposed to trade issues which are the responsibility of International Trade, should be the responsibility of DFO, because product development and production decisions are directly dependent on market information.

The study team's alternatives are an integrated approach to less government in the industry, leading to a better industrial environment and a successful fishing industry. In the long run, they mean less cost to government in this common property resource. This is not to say that the short-term adjustments will not be difficult and without pain. However, if a viable industry is to develop, these issues must be addressed openly and pursued with strong political will.

In the view of the study team the government must focus the task of DFO to maximize economic returns to Canada from the fish resource and allow the industry to operate in a business-like manner, including reducing the requirement to maintain jobs merely to permit entry into the social welfare system. Notwithstanding our specific suggestions for reduction in DFO expenditures, by far the greatest savings can only be achieved through focusing the task of DFO on its primary objective of managing and enhancing fish stocks and eliminating the conflicting and counter-productive objectives now being imposed on the department.

# FISHERIES PROGRAMS RECAP
## 1984/85

| | $(Million)* | PYs* |
|---|---|---|
| Fisheries Management | | |
| (i) Research | 90 | 1020 |
| (ii) Licensing/Allocations | 20 | 265 |
| (iii) Regulation & Enforcement | 126 | 1602 |
| Small Craft Harbours | 141 | 145 |
| Marketing and the Food Centre | 7 | 38 |
| Foreign Fishing Regulations | 7 | 23 |
| Fish Inspection Program | 31 | 578 |
| Quality Improvement | - | - |
| | | |
| Development | | |
| (i) A-Base | 10 | 51 |
| (ii) Special Projects** | 60 | 93 |
| Newfoundland Bait Program | 10 | 41 |
| Fisheries Prices Support Board | 2 | 6 |
| Fisheries Improvement Loans | 4 | 3 |
| Fishing Vessel Assistance Plan | 6 | 14 |
| Fishing Vessel Insurance Plan | 3 | 53 |
| Salmonid Enhancement Program | 38 | 233 |
| Sport Fishery | - | - |
| Aquaculture | 3 | 46 |
| Observe Record Report Program | - | - |
| Fishing Times and Areas B.C. | - | - |
| Fisheries Statistics and Analysis | 1 | *** 58 |
| Scientific Information and Publications | 1.5 | 21 |
| Can & Nfld Restructuring Agreement | 91 | - |
| **TOTAL** | 651.5 | 4232 |

Source: DFO Program Inventory Recap

* $ and PYs are slightly higher than individual assessments because these numbers include management overheads.

** Soft dollars 84/85 include limited ERDA funds SRCPP, special development projects. In 85/86 as ERDAs are implemented fully dollar amount remains about constant.

*** PYs are included in regulation and enforcement number and are not double-counted in total.

## FISHERIES MANAGEMENT

### OBJECTIVES

To conserve and enhance the fisheries resource, and promote the orderly and efficient harvesting of this resource.

### AUTHORITY

BNA Act
Fisheries Act
International Conventions and Treaties.

### DESCRIPTION

This large program has three major components, and they are as follows:

a. Resource Assessment and Research
(1,020 PYs and $90m)

This component consists of carrying out the biological science required for resource management.

b. Licensing and Resource Allocation
(264 PYs and $20m)

This component consists of setting harvesting levels, allocation of these harvest levels among various user groups, licensing systems to control access, and the collection of fisheries data.

c. Regulations and Enforcement
(1,602 PYs and $126m)

This component consists of surveillance and the enforcement of regulations.

Separate assessment notes have been prepared for each because of the relatively large expenditures involved in each.

## BENEFICIARIES

The program directly affects the activities of some 80,000 commercial fishermen across Canada, recreational and Native fishermen, as well as indirectly affecting 28,000 plant workers and the operation of about 1,000 fish plants.

## EXPENDITURES ($000's)

| | **84/85** |
|---|---|
| PYs | 2,886 |
| Salaries | 110,007 |
| Other O&M | 87,425 |
| Capital | 38,711 |
| Grants/Contributions | 788 |
| **TOTAL** | **236,931** |

**Regional Distribution**

| | **PY** | **84/85** |
|---|---|---|
| Ottawa H.Q. | 274 | 60,111 |
| Atlantic | 1521 | 103,449 |
| Quebec | 198 | 14,771 |
| Central/Western | 135 | 9,471 |
| Pacific | 758 | 49,129 |
| **TOTAL** | 2,886 | 236,931 |

## OBSERVATIONS

The Department of Fisheries and Oceans (DFO) spent $237 million in 1984/85 to manage a fishery with a dockside landed value of $887 million.

DFO owns and operates the government's third largest fleet, consisting of 20 major, 207 medium and more than 450 small vessels. They are used for fisheries research, surveillance and enforcement, and oceanography and hydrography.

## ASSESSMENT

The department is generally recognized by the industry as having done a good job in protecting and enhancing the resource; probably better than other countries.

Over the past 15 years or so, the department has broadened its fisheries management mandate from simply protecting the resource, to increasingly controlling the socio-economic structure and competition in the industry.

During this comparatively short period, the fishing industry has gone from being relatively unregulated, to now being one of the most regulated industries in the country. In spite of this growth in regulation, the industry is still burdened with too many fishing vessels, overcapacity in processing plants, and generally too many participants for the resource base to support.

Spending $237 million per year to manage a fishery with a landed value of $887 million simply cannot be justified. Another way of looking at this, is that most fisheries are seasonal, so that the 80,000 fishermen could be equated to no more than 30,000 fishing PYs. When this is compared to the 2,886 PYs in this Fisheries Management program, it suggests there could be one DFO fisheries management PY for approximately every 10 industry PYs.

## OPTIONS

The study team recommends to the Task Force that the government consider reducing expenditures and PYs in this program by 20 per cent over a period of two years. This will result in a more reasonable level of expenditures relative to the value of the resource.

This goal can be achieved by the following reductions in the three major components:

a. Resource Assessment and Research 20%
b. Licensing and Resource Allocation 50%
c. Regulations and Enforcement 10%

These reductions reflect a focusing of the program more on its primary objective of protecting the resource, and less on attempting to regulate the socio-economic aspects of the industry, and a continuing need to emphasize enforcement in the field.

## RESOURCE ASSESSMENT AND RESEARCH COMPONENT
## (PART "A" OF FISHERIES MANAGEMENT)

### OBJECTIVE

To provide scientific advice for management of fish stocks and fish habitat.

### AUTHORITY

The Fisheries Act.

### DESCRIPTION

This component is part of the overall Fisheries Management program, the other components being Licensing and Resource Allocation, and Regulations and Enforcement.

It consists of carrying out the biological science required for resource management. Elements of the program include:

determining stock populations, boundaries and structures;

measuring growth and reproductive capacity, and calculating mortalities;

research relating to fisheries habitat;

research into gear behavior, survey design, fish biology and behavior; and

delivery of management advice to clients.

The program activities are carried out from 12 major scientific centres across Canada.

### BENEFICIARIES

Direct beneficiaries are the Department of Fisheries and Oceans (DFO) resource managers and international agencies such as the Northwest Atlantic Fisheries Organization (NAFO). The ultimate beneficiary is the total fishing industry.

## EXPENDITURES ($000's)

| | 84/85 |
|---|---|
| PYs | 1,020 |
| Salaries | $41,575 |
| Other O&M | 38,522 |
| Capital | 9,320 |
| Grants/Contributions | 735 |
| **TOTAL** | $90,152 |

Resource-by Region[1]

| | PY | 84/85 |
|---|---|---|
| Ottawa H.Q. | 83 | $16,046 |
| Atlantic | 617 | 51,475 |
| Quebec | 77 | 5,950 |
| Central/Western | 76 | 5,241 |
| Pacific | 167 | 11,440 |
| **TOTAL** | 1,020 | 90,152 |

[1] Includes an allocation of management, ships and administrative overhead.

## OBSERVATIONS

The fishing industry is of the opinion that Canada's fisheries research is the best in the world, and that resource assessment is one of DFO's essential roles.

Even though the industry was generally satisfied with the performance of this program, there was concern about its cost effectiveness. In spite of research expenditures amounting to hundreds of millions of dollars over the years, there are still major gaps in the knowledge of some major commercial stocks such as Pacific salmon and Atlantic herring.

Concern was also expressed about the high cost of operating fisheries research vessels, and that more economical methods of doing such research should be possible.

There is minimal industry input to the allocation of research resources, although the industry does admit partial responsibility due to a lack of sufficient interest on their part. A Fisheries and Oceans Research Advisory Committee does exist, and its members come from outside government. This committee, however, advises the Minister on relatively broad research policy and issues, and usually does not become involved in the selection and review of specific projects.

The industry would also like a closer working relationship with the DFO scientific staff. For example, some fishermen would like scientists to go out in their boats, at no charge, to see what is really going on. Some fishing companies would also like to participate in departmental technical committees, possibly because they suspect that scientific assessments may be modified by socio-economic considerations.

There is also widespread concern that the department may combine all regional fisheries research programs under a new ADM-Science, in contrast to the present system where such programs are under the direct management control of the regional Directors-General. The consensus was that this would be a step back to the previous Fisheries Research Board, which was supposedly preoccupied with basic research as compared to resource assessment.

## ASSESSMENT

A strong and credible fisheries resource assessment and research program is essential to the department's primary role of protecting and enhancing the fisheries resource. The cost of this program relative to the value of fish landings, however, may be questioned.

The fact that for many stocks, the Total Allowable Catches (TACs) seem to remain uniform for several years is an indication that assessments are far from being precise. The question must be asked on how much more precision is possible, and are the expenditures required to achieve that precision really justified?

The cost effectiveness of this program may be improved by measures which include:

a. placing more emphasis on stock assessment and less on basic research;

b. developing more economical ways of establishing TACs, and not continue refining such estimates beyond practical, operational levels;

c. allocating research resources more in relation to the value of commercial fisheries (e.g., less on Atlantic salmon) and more toward important commercial stocks where knowledge of the resource is particularly deficient (e.g., crab in the Gulf of St. Lawrence);

d. making greater use of charter or private fishing vessels for research purposes; and

e. involving the fishing industry more in resource assessment, such as in the selection, review and conduct of related research projects.

If national coordination of fisheries research in the regions, or with Oceans Science and Surveys is weak, then the reorganization of such research into a single line organization is not the only solution. The danger of creating a research organization which is less responsive to the operational needs of fisheries management is a very valid concern. For these reasons the study team recommends to the Task Force that regional fisheries and oceans programs should not be combined into a new line organization under an ADM-Science. An alternative way of better coordinating regional research activities must be developed.

**OPTIONS**

Maintain the number of scientific staff directly involved in fisheries stock assessment, but reduce total expenditures on this program by 20% by measures including:

a. Consolidating the department's research activities with a view to reducing the number of separate research centres across Canada (12), with their related operational costs.

b. Reducing the number of fisheries research vessels, and increasing the use of chartered vessels, either privately-owned or vessels operated by other departments.

and improve the cost effectiveness of the program by measures including:

a. Involving the fishing industry in the resource assessment process, including the selection, review and actual conduct of related research projects.

b. Directing research resources more in relation to the value of commercial fisheries, and toward important stocks where knowledge is deficient.

# LICENSING AND RESOURCE ALLOCATION COMPONENT
# (PART "B" OF FISHERIES MANAGEMENT)

## OBJECTIVES

To conserve and enhance the fisheries resources.

To promote the orderly and efficient harvesting of the commercial, Native and recreational fisheries.

To develop licensing policies and regulations.

## AUTHORITY

BNA Act
Fisheries Act
International Conventions and Treaties.

## DESCRIPTION

This is one component of the Fisheries Management program, the other being Resource Assessment and Research, and Regulations and Enforcement.

The key features of this component program involve:

a. the setting of harvest levels;

b. the allocation of these harvest levels among various user groups;

c. the establishment and implementation of licensing regimes necessary to control access to the common property resource and to control competition; and

d. the collection and analysis of statistical data on such variables as catches, effort, costs and earnings.

The output of this component includes:

a. annual or seasonal fishing plans which define Total Allowable Catches (TACs) for most stocks; these TACs are further subdivided by: geographic areas;

user groups (e.g., commercial, recreational, Native);
type of fishing gear (e.g., seiners, trawlers, fixed gear, etc.);
size of vessel (e.g., by length, inshore/offshore, etc.);
and now, also by Enterprise Allocations (e.g., quotas by company, or individual boats).

b. issuance of limited entry licences for fishing boats; and

c. issuance of personal fishing licences for all commercial fishermen, except in Ontario, and for recreational fishermen in B.C.

**BENEFICIARIES**

The component directly affects the activities of some 80,000 commercial and 6 million recreational fishermen acros Canada, as well as indirectly affecting 28,000 plant workers and the operation of about 1,000 plants.

**EXPENDITURES ($000's)**

| | **84/85** |
|---|---|
| PYs | 264 |
| Salaries | 9,928 |
| Other O&M | 9,277 |
| Capital | 1,258 |
| Grants/Contributions | 53 |
| **TOTAL** | 20,516 |

| Resources-by Region[1] | **PY** | **84/85** |
|---|---|---|
| Ottawa H.Q. | 54 | 5,124 |
| Newfoundland | 49 | 2,708 |
| Gulf | 44 | 2,373 |
| Scotia-Fundy | 32 | 1,920 |
| Quebec | 29 | 1,999 |
| Central/Western | 17 | 1,023 |
| Pacific | 39 | 5,369 |
| **TOTAL** | 264 | 20,516 |

[1] Includes an allocation of management, ships and administrative overhead.

## OBSERVATIONS

Licensing and allocation in the Canadian fishery is a relatively recent procedure. Prior to the mid-1970s, only a few fisheries such as lobster had limited entry licensing, and there were no allocations. After the mid-1970s, limited entry licences were gradually introduced in practically all fisheries and in the late 1970s, resources were increasingly allocated to specific fleet sectors. Now, to the extent possible, quotas are being allocated to individual fishing enterprises and boats.

Therefore, in a period of about 15 years, Canada's fishing industry has gone from practically no regulation to one of the most regulated fisheries in the world. The Department of Fisheries and Oceans' (DFO) perceived mandate during this time has therefore expanded from simply conserving the resource in the wild, to an emphasis on managing the overall socio-economic aspects of the fishery.

At present, all decisions relating to the issuance, change, and transfer of limited entry licences are made by the Minister, upon advice by the department. There is a consensus in the fishing industry that this system must be changed. The widespread view is that in many cases such decisions are based on partisan consideration, that they often create economic harm to the industry, and contribute to a loss of confidence in the regulatory system.

On the Atlantic coast, in the past, the annual allocation of stocks among the various fleet segments (e.g., inshore/offshore) was contentious. Most problems however, have been resolved and this is no longer an issue. There are continuing disagreements relating to allocations by geographical areas. Newfoundland, for example, claims priority for fish adjacent to its coast, particularly for northern cod. The industry in the Gulf of St. Lawrence as another example, wants vessels from outside excluded from the Gulf.

On the Pacific coast, allocation of salmon stocks among the various user groups (i.e., commercial, recreational, Native) is a continuing controversy.

A continuing topic of discussion on both coasts is whether or not limited-entry licences should be fixed to a boat or person (including corporate persons). This is an area of significant inconsistency in federal policy. For example, on the west coast herring fishery the licence is affixed to the person, whereas in the salmon fishery it is attached to the boat.

There are presently bans on utilizing modern harvesting technology which are based primarily on socio-economic considerations. For example, no Canadian can operate a factory-freezer trawler, even though foreign countries are allowed to operate such vessels in our waters.

A majority of Atlantic provinces want some degree of management responsibility over licensing and allocation. The rationale is that such control means control over raw material supply, and thereby the overall structure of the fishing industry.

## ASSESSMENT

In terms of protecting the fisheries resource, Canada has done perhaps the best job in the world. Unfortunately, there are signs of some slippage in this performance, primarily because biological or conservation goals are increasingly being sacrificed to socio-economic considerations. The recent example of extending the crab fishing season in the Gulf to allow plant workers to become eligible for unemployment insurance benefits, even though the biologically established quotas had been caught, illustrates this concern.

Allowing the provinces some co-management or other forms of increased control over licensing and allocation is not supported by the study team for reasons including:

a. constitutionally, this resource is a common property of the people of Canada;

b. co-management simply is a less effective way of management in any situation;

c. sea fish migrate between the waters adjacent to various provinces, and fishermen from several provinces often fish in common areas, thereby creating the rationale for a central regulatory agency;

d. the resulting "balkanization" of the fishery would further reduce its economic potential; and

e. examples of joint or co-management of fisheries such as in the European Economic Community, or in recent Canada/U.S. salmon negotiations illustrate the resulting difficulties.

For these reasons, recent trends toward establishing "provincial quotas" must be discouraged.

The current system, whereby the Minister makes the fina decisions relating to individual limited entry licences is unsatisfactory and opposed by the industry for the following reasons:

a. licence decisions are often based on other than true economic or conservation factors;

b. time delays implicit in such a system result in uncertainty in the industry; and

c. the paperwork and time burden imposed on the Minister for such operational details.

The current DFO licensing structure does in part reflec the value of landings, since fees depend in part on the size of vessels. Obtaining a full resource rent from the industr is considered unreasonable at the present time, given the dismal profit picture of most fishing enterprises. Nevertheless, this principle should guide further fee increases, which will become appropriate as fleet profitability improves.

The current ban on some types of modern fishing technology, while perhaps addressing short-term social realities, is harming the competitive position of this industry on export markets and sometimes jeopardizing Canada's claim to certain resources. For example:

a. access to certain markets, such as redfish in Japan,is limited because our current wet-fish technology does not provide the necessary product;

b. access to other international markets such as for mackerel, requires very low production costs which cannot be provided by a small boat, inshore fishery; and

c. in some cases, again using mackerel, Canada cannot harvest a significant part of the resource in our waters, and as a result, foreign nationals (e.g. the U.S.) are gradually laying claim to them.

Affixing licences to persons rather than boats leads to many types of abuses and regulatory problems. For example, some licence holders on the West Coast profit by renting such licences to boat owners. On the East Coast, licence holders defaulting on their boat mortgages can transfer or sell the licence, thereby leaving the mortgage holder with an unlicensed and less marketable vessel.

It is, therefore, important that licensing policy initiatives be made to improve the economics of the Canadian fleet. Such initiatives would include:

a. encouraging fishermen to "buy-out" other fishermen and allow subsequent licences to be combined into more viable and stable fishing enterprise (e.g. expanding vessel size, multi-species fishing);

b. developing allocation mechanisms to lengthen fishing seasons and reduce "gluts", which is of particular benefit to the economics of processing sector; and

c. expanding the concept of Enterprise Allocations (EAs) to as many sectors of the fleet as is reasonable. It should be noted that EAs simply won't work if they are applied in a fishery which is not now economic; they simply encourage cheatin and are practically impossible to administer.

Firm, consistent and long-term licensing policy must be developed, preferably with industry, and written down. At present, there are some written policies, but it is explicitly stated that they are "subject to change at any time without notice". There are many written policies, as well, which are ignored at the discretion of the Minister an DFO officials (e.g. recent case of N.S. vessel owner allowed to charter a freezer vessel larger than his licence would otherwise allow). Finally, there are numerous policies whic are well known, but not actually written down (e.g. policy discouraging processors from owning fishing vessels).

The lack of such a policy base results in practically all significant licensing and allocation issues being referred to Ottawa headquarters. As a result, much of the decentralized structure of DFO is in appearance only.

**OPTIONS**

The study team recommends to the Task Force that the government consider:

a. Developing preferably in conjunction with the industry, long-term policies relating to licensing and allocation. Such policies, as well, should be closely followed and not be subject to change without notice.

b. Basing TACs for various stocks purely on biological or conservation considerations, and not on socio-economic factors. The related licensing and allocation should also be focused primarily on protecting the resource. Economic decision making must be left primarily to the industry. As such, expenditures and staff involved in socio-economic planning within this and related programs, should be reduced substantially.

c. Establishing an independent Licence Review Board having the authority to approve the issuance, transfer and conditions of licences. A significant number of members should be from outside the fishing industry.

d. Retaining all authority or function relating to the management of the sea fisheries at the federal level, and rejecting any proposals for co-management of the licensing and allocation program. On the other hand, it may be appropriate to delegate additional management responsibilities for the inland fisheries, sedentary resources in estuarine waters (e.g., clams), and sea plants, to provinces.

e. Not allocating fisheries stocks along provincial lines. (i.e., no provincial quotas).

f. Improving the financial viability of both the fishing and processing sectors by:

    a. extending the concept of Enterprise Allocations to as many sectors of the fishing fleets as is practical;
    b. allowing fishing vessel owners to combine licences so as to increase the size of their vessels, and to allow fishing for a variety of species;
    c. lengthening fishing seasons to reduce gluts and to provide more constant raw material supplies to processing plants; and
    d. treating everyone in the industry the same, and therefore remove the unwritten policy that discourages fish processors from owning fishing vessels.

g. Affixing or vesting all limited entry licences to specific fishing vessels. As well, precise transferability principles must be established, together with suitable vessel replacement rules.

h. Removing any technical limitations on vessels, where it can be shown that such technology will not cause harm to the resource base. For example, the current ban on factory-freezer trawlers should be eliminated, especially for companies having specific Enterprise Allocations.

The government should also reduce overall expenditures and person-years on this component by 50%. Most of the work relating to resource allocation has been completed and such allocations no longer change significantly from year to year. As well, this is consistent with the study team's recommendation that the government should not overburden the industry with socio-economic regulations which inhibit its profitability.

# REGULATIONS AND ENFORCEMENT COMPONENT (PART "C" OF FISHERIES MANAGEMENT)

## OBJECTIVES

To protect, restore and develop fish habitat. In Atlantic and Pacific Canada and in the Territories to conserve and enhance the fishing resource base; and to promote the orderly and efficient harvesting of the commercial, Native and recreational fisheries.

## AUTHORITY

BNA Act, Fisheries Act and Regulations, Coastal Fisheries Protection Act and Regulations, Territorial Seas and Fishing Zones Act and Geographical Coordinates Order, International Fisheries Conventions and Treaties.

## DESCRIPTION

This is only one component of Fisheries Management, the other parts being Resource Assessment and Research, and Licensing and Resource Allocation.

The Regulations and Enforcement component is divided into three key elements:

a. the development and promulgation of regulations to provide a legal basis from which to implement the Department of Fisheries and Oceans' (DFO) mandate;

b. the training program, to provide trained fishery officers who ensure compliance with fisheries legislation; and

c. the surveillance and enforcement element or operational portion of the program comprised of several sub-elements such as observers, air surveillance, offshore enforcement and coastal/inland enforcement, including habitat management.

## BENEFICIARIES

The Atlantic, Pacific and N.W.T. marine fisheries resources and the fishing industry in these regions.

**EXPENDITURES ($000's)**

| | 84/85 |
|---|---|
| PYs | 1,602 |
| Salaries | $58,504 |
| Other O&M | 39,626 |
| Capital | 28,133 |
| Grants/Contributions | - |
| **TOTAL** | 126,263 |

Resources-by Region[1]

| | PY | 84/85 |
|---|---|---|
| Ottawa H.Q. | 137 | $38,941 |
| Nfld. | 209 | 15,030 |
| Scotia-Fundy | 357 | 19,557 |
| Gulf | 213 | 10,386 |
| Quebec | 92 | 6,822 |
| Pacific | 552 | 32,320 |
| Western | 42 | 3,207 |
| **TOTAL** | 1,602 | 126,263 |

[1] Includes an allocation of management, ships and administrative overheads.

**OBSERVATIONS**

Generally, the total industry is supportive of the enforcement program and there is a consensus that:

a. enforcement should be tougher and penalties should be more severe, particularly so that such penalties would exceed the potential benefits to fishermen who contravene the regulations;

b. the enforcement budget at the field level was being eroded in areas such as O&M, thereby limiting patrol activities and the overall effectiveness of the program; and

c. in general, this is the last area where DFO resources should be reduced.

There was also industry consensus that there were too many regulations, and that the regulatory structure should be simplified. Other suggestions were that:

a. more emphasis should be placed on enforcing existing regulations, rather than creating new ones;

b. as new regulations are added, old ones should be removed;

c. more consideration should be given to providing "sunset" clauses as a means of regulating the proliferation of regulations; and

d. more effort should be placed on communications with fishermen relating to regulations.

The delay of the federal government in passing fisheries regulations is becoming a major concern. This process used to take several months; it now takes close to two years. As a result, many regulations are passed well into the fishing season or even after the season is finished. As well, this is a contentious federal/provincial issue for provinces which have been delegated the management responsibility for freshwater fisheries, and thereby depend on the federal government to enact regulations.

It is a common view of the industry that many prosecution actions are ineffective for reasons which include:

a. the Minister using his authority either to prevent the department from continuing a prosecution action (e.g. several cases in B.C. relating to Natives and U.S. citizens), or to actually overruling a court decision and discharging the penalty (e.g. a recent case of a lobster fisherman in P.E.I.);

b. deficiencies in the legal training of fisheries officers resulting in many cases being lost in court;

c. poor drafting of regulations, including for example, "loopholes" which are readily obvious to those in the industry;

d. inappropriate penalties prescribed in the regulations, relative to the potential gains from breaking the law; and

e. an apparent lack of support by the courts, possibly because they view fishermen as being overregulated.

Another concern is that most of the recent growth in the department has been in areas other than field enforcement. Fisheries officers not only have to enforce a much larger number of regulations than previously, but are now required to perform additional functions such as issuing licences.

A large proportion of the program expenditures relate to the operation and maintenance of DFO vessels. During the consultations it was suggested the department could reduce expenditures for sea surveillance through increased use of charter vessels.

## ASSESSMENT

The effectiveness of the whole fisheries management structure depends on the level of compliance by the industry. It is therefore important that the industry support and be involved in the development of fisheries management policy. If the enforcement program is ineffective, then expenditures on all the other program components in the management structure, such as research resource assessment, licensing and allocations are wasted.

The provinces and DFO regional staff are justified in their complaints that passing fisheries regulations through the federal system now takes close to two years. The present system cannot respond to changing needs particularly in the sport and Pacific fisheries. As a result, a growing number of management initiatives are legally invalid for periods of time. In the cases of the provinces, one alternative would be to change the Constitution to allow them full rather than delegated management responsibility over inland fisheries. This seems, however, to be an extreme action given the problem is primarily an administrative one.

Enforcement should be more stringent and penalties should be increased, particularly in those fisheries where sanctions are currently not close to the potential gains from illegal fishing. If charging the maximum penalties prescribed in the Act is not feasible, then greater use should be made of withdrawing fishing privileges, something now relatively effective in the lobster fishery.

Although enforcement should not be weakened, an expenditure of $126 million to draft and enforce regulations for a fishery with a dockside landed value of $887 million can be seriously questioned. It is therefore essential that the department develop means of achieving adequate enforcement at less cost.

## OPTIONS

The study team recommends to the Task Force that the government consider improving the effectiveness of the regulatory and enforcement program by:

a. Reducing the time required to pass fisheries regulations through the federal government system.

b. Improving the drafting of such regulations through more consultation with the industry.

c. Increasing penalties so that they exceed the potential benefits from illegal fishing.

d. Ceasing to use Ministerial authority either to stop prosecution actions or to overrule court decisions or penalties.

e. Simplifying and consolidating regulations so they are more acceptable and understood by fishermen and the courts.

The department must reduce by 10% the cost of providing adequate enforcement by methods which include:

a. Reducing the size of the present DFO fleet operations by increased use of chartered vessels, either from the private sector or other departments.

b. Improving the effectiveness of fisheries officers through better training, closer management control, focusing resources on known areas of poor compliance.

c. Reviewing the increasing use of fisheries officers for other, non-enforcement functions such as data collection, licensing, etc.

d. Achieving more self-regulation by the industry through education programs, industry administered warden programs as used in the P.E.I. lobster fishery.

e. Substantially reducing the size of the Ottawa headquarters component of this program (137 PYs).

## SMALL CRAFT HARBOURS (SCH)

### OBJECTIVES

To provide and administer regional harbour systems in support of the commercial fishing industry, and to assist in the provision, maintenance and operation of recreational harbour facilities.

### AUTHORITY

The Fishing and Recreational Harbours Act.

### DESCRIPTION

The program is designed for the maintenance and operation of 1,419 fishing and 836 recreational harbours and wharves. Harbours vary from those where only a launching ramp is provided to those where there is a wide range of facilities: breakwaters, dredging, wharves, ramps, electrical services, waterlines, parking lots, storage, etc. Harbours are classified in categories A, B, C and D depending upon vessel activity. Services are provided in varying degrees to each class of harbour. Whereas Class A usually provide a wide range of services and full-time on-site management, Class C ones provide minimal services. Class D harbours are virtually inactive. Approximately 80% of all fish landings are made by some 30,000 fishing vessels which use small craft harbours.

By regulation, berth fees are collected from commercial fishing vessels based on a fee per vessel meter. All sizes are subject to berth fees in British Columbia and Ontario, while commercial vessels under 45 feet are exempt from fees in Quebec and the Atlantic provinces. All commercial fishing vessels are exempt in the Prairies and the Territories. The regulations also specify higher berth fees for recreational vessels. However, no exemptions apply to these vessels and fees are generally well below those charged by private marina operators and in practice, recreational fees are not consistently collected. Revenue is also collected through leasing harbour facilities to municipalities and licence fees for installations such as hoists, gas pumps, etc. Total revenue generated by the SCH program in 1984/85 is approximately $2.5 million with $1.1 million from leases/licences and $1.4 million from berths.

The program is administered through seven regional Department of Fisheries and Oceans (DFO) offices by Directors who have a line relationship to the Regional Director General for Fisheries Management. Strong functional direction is provided through a headquarters Small Craft Harbours Director General. SCH funds are controlled through headquarters.

## BENEFICIARIES

Approximately 70,000 fishermen, 1,000 communities, fish processors and recreational boaters and sport fishermen.

**Commercial/Recreational Harbours by Region and Estimated Replacement Value**

| **Region** | **No. of Harbours** |  | **Replacement Value ($ M)** |  |
|---|---|---|---|---|
|  | Com. | Rec. | Com. | Rec. |
| Nfld. | 405 | - | 500 | - |
| Scotia/Fundy | 354 | 40 | 375 | 25 |
| Gulf | 341 | 10 | 485 | 15 |
| Quebec | 110 | 271 | 200 | 50 |
| Ontario | 13 | 396 | 35 | 265 |
| Western | 48 | 39 | 10 | 5 |
| Pacific | 148 | 80 | 260 | 90 |
| **Sub-total** | 1,419 | 836 | 1,865 | 450 |
| **TOTAL** | 2,255 |  | 2,315 |  |

**EXPENDITURES ($M)**

| | 83/84 | | 84/85 | | 85/86 | | 86/87 | | 87/88 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Com. | Rec. | Com. | Rec. | Com. | Rec. | Com. | Rec. | Com. | Rec |
| PYs | 116 | 12 | 113 | 14 | 103 | 11 | 103 | 11 | 103 | 11 |
| Salaries | 3.5 | .5 | 3.6 | .6 | 3.2 | .5 | 3.2 | .5 | 3.2 | .5 |
| Other O&M | 13.4 | 2.3 | 14.5 | 2.2 | 19.5 | 1.8 | 19.9 | 1.4 | 19.9 | 1.4 |
| Capital | 73.9* | 14.9* | 84.8* | 16.9* | 32.4 | 1.7 | 21.4 | 1.5 | 19.9 | 1.5 |
| **TOTAL** | 90.9 | 17.7 | 102.9 | 19.7 | 55.1 | 4.0 | 44.5 | 3.4 | 43.0 | 3.4 |

*Includes incremental funding under the Special Recovery Capital Projects Program: $64 M 83/84, $83 M 84/85.

**OBSERVATIONS**

The provision of basic infrastructure for commercial fisheries is seen by the study team as a legitimate responsibility of the federal government.

During the consultation process, fishermen/processors emphasized the importance of small craft harbours to their operations. Concerns were expressed over the procedure by which funds were allocated to particular harbours and how decisions were made to create new facilities.

The absence of uniform berth fees across Canada results in regional subsidies. In the Atlantic provinces, approximately 95% of all commercial fishing vessels are exempt from berth charges because they are less than 45 feet in length. Fees for vessels over 45 feet are not consistently collected. In British Columbia and Ontario, all commercial vessels pay, regardless of length.

The 836 recreational harbours managed by the SCH program represent approximately 10% of the recreational berths available in Canada, and are in direct competition with private sector marinas. Fees charged are consistently less than private marinas. These facilities do not address a prime responsibility of the federal government - the provision of infrastructure for commercial fisheries - and relate to tourism/recreation which should be the responsibility of the provinces or the private sector.

464 or approximately 20% of all small craft harbours are classified as Class D. Some have been identified as surplus but the majority remain on the inventory although they are virtually inactive.

**LOCATION OF CLASS D HARBOURS**

| **Region** | **Class D** |
|---|---|
| Newfoundland | 159 |
| Gulf | 82 |
| Scotia/Fundy | 144 |
| Quebec | 37 |
| Ontario | 21 |
| Western | 8 |
| Pacific | 13 |
| **TOTAL** | 464 |

Normal A-Base funding is approximately $40 million. Concerns were expressed that this is not sufficient to adequately maintain current facilities with a replacement value of $2.3 billion.

## ASSESSMENT

While the provision of basic infrastructure is seen as a legitimate responsibility of the federal government, this does not preclude the imposition of reasonable charges to offset the cost of these facilities. The current system of imposing fees is inconsistent and inequitable as the majority of revenues from small craft harbours are generated from the West Coast. To eliminate inequities, these berth charges should be imposed uniformly across Canada for all commercial and recreational users. These fees, particularly in the case of recreational harbours, should be equivalent to fees charged by local private marinas.

Fees for commercial berths should be imposed as part of the annual licence fees. Fees should be charged for all space/facilities used for commercial purposes, including fish buyers purchasing fish directly off boats.

The federal government should cease the construction, operation, and maintenance of recreational harbours. These facilities are primarily for recreational/tourism purposes, and not related to the federal responsibility for infrastructure for commercial purposes. As a result, the entire A-Base of the SCH program would be available for commercial harbours.

Class D harbours, the majority of which are virtually inactive, should be disposed of as quickly and as economically as possible.

To address the concerns raised over the process by which funds are allocated and new projects initiated, expenditures should be overseen by an independent board which would include representatives from the fishing industry. This central board, supported by regional advisory committees, would consider requests for new facilities, as well as the priority to be given to the repair and maintenance of existing facilities. This Board could also function as the Board proposed to make decisions regarding the allocation of fishing licences (see Assessment Note on Commercial Licences).

## OPTIONS

The study team recommends to the Task Force that the government consider improving the operation of the Small Craft Harbours program on a priority basis by:

a. Imposing uniform fees for all users of small craft harbours, and facilities/space used on small craft harbours.

b. Limiting this program to commercial harbours; withdrawing from the provision of recreational small craft harbour facilities; and disposing of current recreational harbours because such federal facilities often compete unfairly with private marinas.

c. Disposing of Class D harbours as quickly and as economically as possible.

d. Establishing a Small Craft Harbours Board to oversee the approval of new harbour facilities as well as the scheduling of repairs/renovations, to existing facilities.

## MARKETING AND FISHERIES FOOD CENTRE

### OBJECTIVES

To support the Canadian fishing industry by increasing awareness, knowledge and usage of Canadian fish and seafood.

To provide comprehensive market intelligence, market forecasts, early warning and advice to industry and government (including Crown corporations).

To assist industry in improving market returns through the development and implementation of marketing management/business systems.

To inject relevant marketing considerations into fisheries management decisions and policy recommendations.

### AUTHORITY

Fisheries Act; Fisheries Development Act; and the Fisheries Prices Support Act.

### DESCRIPTION

The Canadian fishing industry is highly dependent on export markets. During 1984, almost 80% of Canadian fish production was exported. With the growing resource base in several major species, this dependence on export markets is expected to grow even higher. In contrast to the growing resource base, the markets for Canadian fish and seafood have been relatively static. The challenge facing the industry is to market profitably its expanding catches and production. In this context, increasing per capita consumption of fish in North America is a major task.

The Canadian fishing industry is faced with a continuing cost-price squeeze, highly unstable markets, exchange rate fluctuations, competitive pressures from other fish exporting countries, and from other protein foods such as beef, poultry and pork.

The marketing services provided by the Department of Fisheries and Oceans (DFO) are geared to (a) supporting industry's efforts to increase awareness, knowledge and usage of Canadian fish and seafood; (b) expanding markets; (c) improving market returns; (d) assisting industry in planning for the needs and opportunities of the marketplace, (e) providing marketing information required by this and other government departments.

Canadian fish products are exported to over 60 countries around the world. The 1983 landings (seafood) were 1.3 million metric tonnes valued at $874 million with a market value of $2.1 billion. The price obtained in the marketplace for Canadian fish and fishery products directly affects the livelihood of about 82,000 fishermen involving over 41,000 vessels and 56,000 plant workers.

## BENEFICIARIES

Fish processors (over 930 companies) and their organizations (over 15 across Canada), fish trade and fish trade organizations (food service, retail, wholesalers, brokers) and DFO fisheries managers. Other clients include fishermen and fishermen's organizations, Fisheries Prices Support Board, Canadian Saltfish Corporation, Freshwater Fish Marketing Corporation, other federal government departments and provincial governments, universities, consultants, international and intergovernmental organizations.

## EXPENDITURES ($000's)

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 30 | 32 | 35 | 31 | 30 |
| Salaries | 1,060 | 1,209 | 1,398 | 1,398 | 1,398 |
| Other O&M | 1,396 | 1,431 | 1,362 | 1,388 | 1,388 |
| Canadian Generic Promotion | 2,050 | 1,760 | 1,661 | 302 | 274 |
| Capital | 18 | 18 | 18 | 18 | 18 |
| Grants/ Contributions | 7 | - | - | - | - |
| FREDY | - | 28 | - | - | - |
| **TOTAL** | 4,531 | 4,446 | 4,439 | 3,106 | 3,078 |

## OBSERVATIONS

The marketing program of DFO was considered by most clientele to provide benefits to industry (those without marketing organizations), to government and industry planning groups.

Clientele felt that marketing information was required in the following areas: (a) a broad knowledge of the marketing environment, to assist in defining sales potential, and better target the goals of international bilaterals; (b) pure market intelligence including product forms, competitive suppliers, and current pricing influences, such as exchange fluctuations or landings; (c) market infrastructure development such as packaging systems, distribution systems or costing systems which would benefit broad sections of the industry; and (d) consumer education including generic promotions, public relations campaigns, and recipe development.

While these program elements are usually the exclusive area of corporations it was felt that many companies were too small to have sophisticated marketing programs and qualified personnel to implement them. The great diversity in the size, product ranges and marketing sophistication of companies in the fisheries has also resulted in significant differences in their commitment to marketing.

Many overlaps in the marketing area within government were noted. External Affairs has numerous personnel through the Trade Commissioner Service, as well as headquarters staff organized by geographic trade desks and also by commodity group. Their mandate is to assist export sales via buyer or seller trade missions, international fairs and exhibitions and foreign market intelligence. The Department of Regional and Industrial Expansion by functioning at the processor/plant level, can impact on the ability of the industry to process and pack certain product forms and thus affect end markets. Many provincial governments also provide marketing services to the fishing industry. Such services include, organizing marketing trips, providing financial support for exhibitions, and in some cases, advertising to consumers. Much of this effort may be duplication and not contribute effectively to national seafood marketing goals.

It was felt that while many of these overlaps will probably continue, a coordinating function in the line department was necessary. It is suggested that the DFO marketing group provide the lead in marketing policy and direction for all government agencies, to the extent possible.

## ASSESSMENT

The marketing group of DFO, including the Food Centre provides a valuable service to a highly fragmented and diverse fishing industry. However, these services should be provided by a smaller core of PYs than currently exist in the department, and their use should be focused more on providing marketing information to meet internal government needs, with less emphasis being placed on dissemination of information and publication of reports for the industry.

As industry capability improves in the market planning area DFO should further scale down its activities in this area. The Food Centre as currently staffed and with its current mandate should remain unchanged.

## OPTIONS

The study team recommends to the Task Force that the government consider reducing person-years in this program by 30% by:

a. Ceasing the direct delivery of generic seafood promotion programs. Such programs should be initiated and managed by the industry, and if federal funding is required it should be provided on a cost-shared basis.

b. Restricting the program to activities that do not intrude into the domaine of the private sector: for example, the actual sale of fish products.

c. Reducing the range of marketing services provided to the private sector.

The government should consider charging for all publications and market analyses provided to the industry.

The government should also consider:

a. Maintaining the Food Centre at current level.

b. The DFO marketing group should continue to provide the lead in fisheries marketing policy and direction for all government agencies, including External Affairs and the Department of Regional and Industrial Expansion.

## FOREIGN FISHING REGULATIONS

### OBJECTIVES

To protect fish stocks from over-exploitation through the regulation of foreign fishing effort within the 200-mile zone and through the achievement of bilateral and multilateral treaties and agreements with foreign governments and agencies.

To protect and improve market access for Canadian fish and fish products.

To participate in the negotiation of boundary-related fisheries arrangements.

### AUTHORITY

Section 91(12) British North America Act; Fisheries Act; and Coastal Fisheries Protection Act and Regulations.

### DESCRIPTION

Prior to Canada's extension of jurisdiction to 200 miles, many foreign fleets fished off the Canadian coast with little regard to the declining fish stocks. Through this period the Department of Fisheries and Oceans (DFO) provided technical expertise to External Affairs, and was directly involved in the negotiations at the Law of the Sea Conferences.

With the extension of jurisdiction in 1977 the conservation problem centered on the continued vulnerability of key stocks to foreign exploitation outside the 200-mile limit. At the same time, the Law of the Sea Treaty designated that stocks inside an economic zone surplus to the coastal nations capacity to harvest would be allocated to other nations. In the case of Canada, several species such as round nose grenadier, argentine, and silver hake were not economically exploitable by Canadians and have been allocated to foreign countries.

Canadian catches and allocations increased dramatically at the same time that previous fishing nations became potential customers (Spain, Portugal, United Kingdom). Some countries initiated trade barriers and threats of trade restrictions in order to negotiate for allocations in the Canadian zone.

This process leads to a series of bilateral treaties. The majority of these treaties are either negotiated yearly or at least require yearly updates and discussion on conservation and trade matters.

Maritime boundary negotiations have been another problem area post-200 mile era. Recent examples are the Georges Bank Boundary, and the United States-Canada Pacific Salmon Treaty. The international relations group in DFO has, in consultation with industry, provided the technical advice to External Affairs, who negotiated these boundary agreements.

DFO partially funds, and serves on many international organizations aimed at conservation of sea fish and mammals. Examples are:

Great Lakes Fishery Commission
International Commission for the Conservation of Atlantic Tuna
International North Pacific Fisheries Commission
International Pacific Halibut Commission
International Pacific Salmon Fisheries Commission
North Pacific Fur Seal Commission
Northwest Atlantic Fisheries Organization
North Atlantic Salmon Conservation Organization
International Council for the Exploration of the Sea.

DFO deals with other international organizations whose mandate covers the oceans, fish products, conservation or trade including:

Food and Agriculture Organization (FAO)
Organization for Economic Cooperation and Development, (OECD)
General Agreement on Tariffs and Trade. (GATT)

The international relations group works with industry and the Canadian International Development Agency (CIDA) to expand the seafood component of the UN World Food Program and bilateral food supply agreements. Their efforts have assisted in increasing the fish component from $7 million in 1980 to more than $30 million in 1984.

## BENEFICIARIES

The international aspects of the fisheries sector touches all fishermen and processors since it results in a sharing of the fisheries resource base with foreign fleets, and affects the trade environment within which foreign sales will be completed.

The international relations group provides a base of expertise and advice to many other government agencies and departments such as CIDA and External Affairs.

## EXPENDITURES [1] ($000's)

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 20 | 22 | 22 | 21[2] | 20[2] |
| Salaries | 932 | 1035 | 1087 | 1087 | 1087 |
| Other O&M[2] | 5577 | 4528 | 5669.5 | 5880 | 6180 |
| Capital | 19 | 19 | 19 | 19 | 19 |
| **TOTAL** | 6528 | 5582 | 6775.5 | 6986 | 7286 |

[1] Does not include expenditures on surveillance and enforcement activities related to foreign fleets.

[2] The majority of expenditures represents non-discretionary contributions to international fisheries commissions.

## OBSERVATIONS

The international group and the Ocean Sciences and Surveys Group of DFO assisted External Affairs to successfully conclude a court settlement on the Georges Bank Boundary dispute. This settlement allocated to Canada approximately 50% of the scallop resource and 80% of the groundfish resource available.

Many countries have troubled fisheries sectors (United Kingdom, West Germany, Spain) because of lost access to resources as a result of 200-mile limits around the world. These countries have erected trade barriers, in part, as a means of negotiating access for their fleets to foreign fish stocks. Given that approximately 80% of Canadian fisheries production is exported, Canada must develop agreements and continue to trade in this environment. It is essential when negotiating trade agreements that access to Canadian fisheries resources not be used as a means to sell non-fish products. Negotiation of fisheries access and related trade agreements require a great deal of expertise which resides primarily in DFO.

The international relations group at DFO has established a successful track record of providing improved market access for Canadian producers.

Examples include:

reduction of tariffs on wet salt cod in Portugal from 20% to 3%, by arranging for over-the-wharf sales to the Portuguese fishing fleet. Portugal purchases in Canada increased from $700,000 in 1978 to $75 million in 1980;

achieving guarantees for purchase of special products (squid) by the Japanese fleet, in spite of import quota restrictions; and

guaranteed purchases by the East Bloc in 1985 - USSR $12 million, Cuba $2 million, East Germany $2.1 million, Poland $1 million.

Despite the success of using allocations for market access, Canadian stocks are now reaching their biological limits. Current allocations of non-surplus fish cannot be maintained.

Trans-boundary stocks continue to be vulnerable to depletion outside Canadian waters. These include groundfish on the Atlantic coast and salmon off B.C. and in the U.S. zone. The trans-boundary stocks in Atlantic Canada alone represent $25 million in annual landed value. There is the recent example of West German vessels catching trans-boundary cod after taking their allowed quota inside the zone. Spain and Portugal have also taken large catches of cod and redfish just outside our 200-mile zone.

## ASSESSMENT

The international relations group at DFO has functioned well, particularly since the extension of jurisdiction in 1977. By dealing with fisheries issues bilaterally, it has generally minimized the negative impacts on Canadian trade through this difficult period. The department now faces a new set of challenges. As Canadian stocks near their biological maximums, foreign fleet activity will have to be reduced further.

Market access and reduction in trade barriers will continue to be necessary to gain increased economic returns from the fishery.

Canada must continue its membership in all international forums which are oriented toward conservation and sound management of marine resources.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Expanding DFO's regulation of foreign fleets by moving to greater surveillance of foreign fishing activity. This can be achieved by removing observers from Canadian vessels and allocating them to the foreign fleets. Canadian vessels can still be monitored by a series of shore checks, overflights and occasional boardings at sea.

b. Ensuring that a firm stand is taken against any overfishing offence such as excluding specific offending vessels from further fishing in the Canadian zone or cancelling existing allocations (after appropriate consultations) such as the long term agreement with the EEC.

c. Ensuring that DFO continues to budget for and cooperates with other departments in the area of international enforcement, in particular the Department of National Defence and the Canadian Coast Guard. DFO should explore the greater utilization of such vessels. This would raise the profile of Canadian enforcement in the eyes of foreign governments while possibly reducing fleet costs.

d. Planning for a reduction in fish resources allocated to foreign nations including the cancellation of non-surplus stock allocations.

The government should consider reviewing the need for the current level of person-years in the fisheries area of the fisheries department, given the level of expertise in DFO.

The government should also consider measures to:

a. Assure that the international group continues to provide the leadership role to other government departments, particularly External Affairs. While a small core of fisheries expertise may be required in External Affairs the primary role for bilateral negotiations, trade environment, and multilateral commissions and organizations should remain in the line department.

b. Ensure that DFO maintains its membership in international fisheries conservation and allocation organizations as previously listed.

## FISH INSPECTION

### OBJECTIVE

Assurance that fish and fish products for domestic and export trade meet Canadian and/or foreign country standards for grade, handling, identity, processing quality and safety.

### AUTHORITY

Fish Inspection Act, and provincial fish inspection legislation in all provinces except Quebec and Manitoba.

### DESCRIPTION

The national fish inspection program was established in 1952 following a federal-provincial agreement to enforce uniform standards in the industry. The rationale was the poor sanitary and operating conditions in the Canadian fish processing sector of that time.

The inspection services cover approximately 40,000 vessels landing 1.3 million tonnes of fish per annum, 1,000 processing plants producing 700,000 tonnes of fish products, and 720 fish importers scattered across Canada.

The program activities consist of:

a. setting and enforcing standards relating to the construction, equipment and operation of vessels, unloading and storage facilities, transport vehicles, and processing plants;

b. specifying and enforcing standards relating to grades, identity, quality and safety of raw material and finished fish products;

c. certification of product for export markets;

d. inspection of imported fish products;

e. education of fishermen and processors in proper handling practices.

Involvement with provincial inspection legislation arises from the fact that under the Fish Inspection Act, only federal officials have the authority to regulate fish and fish products destined for inter-provincial or international trade. Because of occasional problems in proving the intent to export and the need to regulate products intended for trade within a province, most provinces have enacted concurrent fish inspection regulations. These regulations are enforced for the most part by federal officials at no cost to the province.

## BENEFICIARIES

All Canadian fish and seafood consumers, and the Canadian fishing industry.

**Beneficiaries/Ouputs by Geographic Region**

| Region | Plants | Vessels | Landing Sites |
|---|---|---|---|
| Nfld. | 159 | 12,082 | 652 |
| Scotia/Fundy | 279 | 6,389 | 397 |
| Gulf | 201 | 8,470 | 251 |
| Quebec | 79 | 2,883 | 240 |
| Ontario | 81 | 1,100 | 275 |
| Western | 85 | 2,385 | 315 |
| Pacific | 155 | 7,200 | N/A |
| **TOTAL** | 1,039 | 40,509 | 2,130 |

## EXPENDITURES ($000's)

| | 84/85 |
|---|---|
| PYs | 578 |
| Salaries | 21,397 |
| Other O&M | 6,857 |
| Capital | 2,479 |
| Grants/ Contributions | - |
| **TOTAL** | 30,733 |

**Expenditures - Distribution [1] ($000's)**

| | PY | 84/85 |
|---|---|---|
| Ottawa H.Q. | 43 | 5,907 |
| Nfld. | 115 | 5,872 |
| Gulf | 96 | 4,298 |
| Scotia/Fundy | 105 | 5,003 |
| Quebec | 71 | 3,356 |
| Ontario | 31 | 1,419 |
| Western | 48 | 2,449 |
| Pacific | 69 | 2,429 |
| **TOTAL** | 578 | 30,733 |

[1] Includes an allocation of management and administrative overheads.

## OBSERVATIONS

The Fish Inspection Program actually has two written objectives. They are:

a. to ensure that fish available for domestic and export markets do not present a health hazard, are of an acceptable quality and comply with Canadian and importing country grade, identity composition and labelling specifications. (i.e., the health, safety, fairness - (HSF) objective); and

b. to promote the best use of the fishery resource and increase the economic potential of Canada's fishery through regulation of industry-wide practices to minimize waste, increase yields, and upgrade product quality. (i.e., the quality control - (QC) objective).

The HSF inspection activities of DFO are an apparent overlap of jurisdiction with Health and Welfare Canada (HWC), which regulates and inspects food products to protect the health of Canadians. Various studies of this, and other similar overlaps with Agriculture Canada (AC) and Consumer and Corporate Affairs Canada (CCAC) have suggested the creation of a centralized food inspection agency which would combine inspection groups from these departments.

As a result of cases of illness resulting from eating fish products, HWC began annual joint inspections with DFO of higher risk fish plants such as canneries. Although the regulations under the Fish Inspection Act are more detailed than those under the Food and Drug Act, it is generally accepted by the industry that HWC is much more stringent in enforcing its regulations.

There are complaints from the industry about inconsistencies in inspection standards and enforcement, as between regions and areas. For example, importers will sometimes divert shipments to those cities where inspection is known to be less stringent. As well, there have been complaints about the relative size and the cost to companies of samples taken by inspectors for analysis, particularly for high valued products such as shellfish.

Many industry representatives also complain about overregulation, specifically on matters which relate to quality control, DFO's second inspection objective. The consensus is that quality control is an industry responsibility.

A significant portion of DFO's resources are devoted to this quality control function. For example, inspectors provide technical advice to smaller fish processing plants which do not have this expertise. This QC role is also reflected by the fact that inspection resources devoted to plants tends to be related to their size and production. For example, large fish plants have resident inspectors.

The relative cost of this multi-objective inspection service can be demonstrated by the fact that there are approximately 1,000 fish plants in Canada and DFO inspection resources amount to 578 PYs (including overheads). In contrast, Health and Welfare Canada devotes 300 PYs (200 technical/100 admin.) to inspect about 11,000 food plants. It should be noted that fish inspectors also spend time inspecting boats, fish,preparing export certificates,and the like.

It is noted that for imported fish products, only the product is inspected. In contrast, for fish products produced in Canada, the vessels, unloading and storage facilities, vehicle transport, processing plants, and the product are inspected. Therefore, Canadian products consumed in this country are subject to more inspection than imported products.

Paralytic shellfish poisoning is a serious seafood health risk. At present, DFO collects shellfish samples and sends these to HWC for analysis. Because of the delays in receiving laboratory results, the product may often be on the market before its hazard level is known. Government and industry officials are concerned about this hazard.

All fish being exported must normally be processed in a plant which is inspected and registered by DFO. There is a "loophole" in the Fish Inspection Regulations however, known as the "fisherman-packer" exemption which allows fish processed by fishermen to be exempt from this requirement. This means that fishermen who process fish are not subject to the same regulations as bona fide processors. During the last several years, this exemption is being increasingly used by fishermen to export their landings directly.

## ASSESSMENT

Perceived advantages of combining the fish and other federal inspection programs into a central food inspection agency are judged to have the following drawbacks:

a. the rationale for such a central agency is not to reduce costs but to strengthen the uniformity of health-related standards in all food products. Improving the consistency of standards should be possible simply by better coordination between the affected departments;

b. many aspects of fish inspection are specialized, such as the evaluation of whole fish quality, which is essentially subjective. As a result, the concept of generalized food inspectors may be questionable;

c. those in the fishing industry have the convenience of dealing with one department on many matters. As well, DFO management can now coordinate the whole range of programs relating to their industry. Separating fish inspection from DFO would simply increase the number of departments those in the industry must deal with, and diminish the federal government's ability to respond to the needs of an industry in a uniform manner;

d. if DFO and Agriculture Canada were to continue a quality control inspection function as a support program for exports, this would lead to duplication of effort between these departments and the central agency;

e. Sweden is the only country with such a central food agency, and this was created during the Second World War primarily because of national concern for food supplies.

There is a fundamental inconsistency between the health and quality control inspection objectives. The primary beneficiaries of the health, safety, fairness objective are the consumers, whereas the quality control objective is aimed at benefiting the fishing industry, such as through increased market returns. The relative importance which various regions and inspectors place on these two objectives may be a basic reason why there appears to be inconsistency in enforcement. One objective leads to a "policeman" role, the other leads to a "technical adviser" role for the inspector.

The study team supports the position put forward by the industry that quality control is an industry responsibility. This is consistent with the overall thrust of our recommendations to have less government intervention in the industry.

The quality control inspection objective is also costly in terms of resources. It leads, for example, to the need to inspect all aspects of the production process from boats-to-plant output. It also leads to having practically full-time or resident inspectors for larger plants.

If the inspection program is limited to the health, safety, fairness objective then:

a. enforcement consistency is more easily attainable; and

b. inspection resources can be reduced significantly, for example, through inspection frequencies based on a combination of plant ratings and health risk assessments of products being produced.

The concept of inspecting only final products, as is now done for imports, does have some appeal in terms of efficiency, but health authorities worldwide reject final product sampling alone as offering insufficient protection. If the inspection program related only to grade standards and prevention of fraud, then final product inspection would be sufficient. However, regulation of sanitary conditions throughout the production process is a necessary preventative measure to ensure that products do not present health hazards.

Problems being caused by the "fisherman-packer" exemption in the Fish Inspection Regulations include:

a. loss of credibility in DFO inspection. Legitimate processors with registered plants quite rightly point out that others are exporting fish without meeting the same regulatory requirements. All those in the industry must be treated equally;

b. increasing exports of whole fish which is a major cause of the current countervail action initiated by the fishing industry in the U.S.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Focusing the inspection activities of DFO on health, safety and fairness objectives. Industry must assume the responsibility as well as the costs for quality control. Expenditures and person-years related to the fish inspection program can then be reduced by 50%. This should be achieved by an immediate reduction of 25%, followed by a further 25% reduction over a period of three years.

b. Ensuring that all those involved in processing and exporting fish are subject to the same regulations. Accordingly, the "fisherman-packer" exemption in the Inspection Regulations should be reviewed.

c. Establishing an agreement between the Minister of Fisheries and Oceans and the Minister of Health and Welfare with respect to the achievement of common standards, inspection methods and enforcement policies for fish and other food products, particularly as they relate to health, safety and fairness.

d. Improving the Paralytic Shellfish Control Program by reducing the time required for laboratory results.

e. Maintaining the Fish Inspection Program within DFO rather than as part of a new, centralized food inspection agency as recommended by the Regulatory Study Team.

## QUALITY IMPROVEMENT

### OBJECTIVE

To improve the quality of Canadian fish and seafood products, and to thereby increase economic returns to the industry.

### AUTHORITY

The Fisheries Act, the Fisheries Development Act and the Fish Inspection Act.

### DESCRIPTION

The Quality Improvement Program (QIP) consists of five components. They are:

Vessel Certification

> The Fish Inspection Regulations were amended September 3, 1982 to require that all vessels be certified as meeting the construction, equipment, and operating requirements to protect fish quality.

Unloading, Handling, Holding and Transportation (U.H.H.T.)

> The Fish Inspection Regulations were amended September 3, 1982, requiring all fish unloading/ handling facilities and transport vehicles to meet standards which ensure that such facilities are properly designed, maintained, and operated to protect fish quality.

Dockside (Point-of-Sale) Grading

> Since the quality of finished fish products is dependent on the quality of the raw material, it is proposed that the raw material be graded at the time of purchase at dockside. Landed quality grades and sampling plans have been developed for Atlantic groundfish and current plans are that grading will be done by licensed industry graders,monitored by the Department of Fisheries and Oceans (DFO) inspection personnel. The criteria for the licensing of these industry graders has been developed. It is planned to make this compulsory in 1986.

Final Product Grade Standards

To improve market confidence and ensure more consistent quality, final product grade standards will be developed and implemented for a wide range of fishery products. The standard for fresh and frozen products of Atlantic groundfish was the first developed. It will be used voluntarily by industry during the next 12 months, after which its use will become mandatory.

In-Plant Quality Control

DFO intends to amend the Fish Inspection Regulations on plant operation to require that an approved in-plant Quality Control Program be a condition for federal plant registration. This requirement will be phased in gradually with full compliance expected by 1986.

## BENEFICIARIES

Fish and seafood consumers, as well as the Canadian fish and fish processing industry.

## EXPENDITURES

Since this program is essentially an extension of the Fish Inspection program, it is difficult to separate expenditures. In fact, it is expected that once the Quality Improvement program is fully implemented, it will become an intrinsic part of the Inspection program.

One identifiable expenditure item is the 36 additional person-years which were allocated to DFO in 1984/85 specifically because of this program.

In addition, DFO plans to continue making significant grants to the industry for a wide variety of quality improvement programs such as ice-making facilities, fish containers, unloading equipment, vessel hold improvements, consulting studies and the like. These programs have been funded from both ongoing programs, temporary programs (e.g. SRCPP) and regional programs (e.g., Economic and Regional Development Agreements ERDAs). (See the Atlantic Development and ERDA program notes for further details).

## OBSERVATIONS

The Vessel Certification and U.H.H.T. Regulations were made mandatory in 1982 and were accepted by the industry without opposition. It should be noted, however, that significant financial assistance was provided to the industry while vessels and facilities were being upgraded to meet these regulatory requirements.

All provinces support this program, and have been providing training programs for dockside graders (with funding from several federal Manpower programs). Most provinces are also planning to enact concurrent provincial legislation.

Quebec now has mandatory dockside grading, with standards which are quite different from the proposed federal ones. The dockside graders are provincial employees whose costs are shared with the industry. The province also duplicates the inspection of processing plants, also with different standards. DFO is negotiating with Quebec to make their standards uniform with federal standards.

Many organizations representing fishermen oppose the proposed dockside grading system. Their reasons include:

a. the concept that quality of fish, and the related price paid, is a contractual matter between the fisherman and buyer, and that government should not be involved in such matters; and

b. the fear that fishermen may suffer a net economic loss from the system either because of the additional costs or lower landings incurred in landing higher quality fish, or because they will be paid significantly less for lower grades of landed fish.

Support for this program from the fish processing sector is mixed. To illustrate:

a. some processor organizations do not support the program, because they view quality control and product specifications as being a matter between the supplier and buyer, not a role of government;

b. other organizations accept the concept of grading programs, however, they doubt if the proposed system will work, or that market returns will compensate for additional costs, or that government regulatory effort will apply equally to fishermen; and

c. some support the entire program.

Generally, the consensus of the fishing and fish processing industry is that the quality of Canadian fish and seafood products has improved significantly during the past several years. It is now felt that the better quality Canadian products can compete successfully, on the basis of quality, with products from Scandinavian countries (who have been deemed the quality leaders).

Food processing plants which are inspected by Health and Welfare Canada, under the Food and Drug Act and Regulations, are not compelled to have formal, in-plant quality control systems. That department, however, strongly suggests to plants that they should have such systems in place for their own benefit.

## ASSESSMENT

The inspection program of DFO has two objectives; a primary one to regulate for health, safety and fairness of fish products, and a secondary objective relating to improving quality control. The Assessment Note on the Fish Inspection program recommended that:

a. quality control should be the responsibility of the industry; and

b. the department should therefore limit its inspection program to the primary objective of regulating for health, safety and fairness purposes.

The need for this Quality Improvement program and the related regulatory structure and expenditures can be seriously questioned, because:

a. the widespread industry view that quality standards are a contractual matter between buyers and sellers of fish and fish products;

b. most major buyers of seafood products already have their own quality standards which suppliers must meet; most such standards differ from the proposed government standards;

c. the lack of support or opposition to this program from most fishermen's associations, large parts of the processing sector, and many brokers and distributors; and

d. the overall improvement in the quality of Canadian fish products in recent years without such regulations.

The provinces can implement their own Quality Improvement programs if they support such a regulatory approach to quality control, as demonstrated by Quebec. They have the legal authority to regulate dockside grading and on-shore processing establishments if they wish. A possible role of the federal government could be to encourage some uniformity among such provincial standards and regulations. Such uniformity, for example, would be particularly helpful for those fishing companies which operate in several provinces.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Retaining existing regulations that pertain to the Quality Improvement program, passed under the Fish Inspection Act.

b. Terminating the remainder of the program relating to dockside grading, in-plant quality control, and final product grading. This will contribute to the person-year reduction identified in the Fish Inspection program.

## ATLANTIC FISHERIES DEVELOPMENT

### OBJECTIVE

To improve the economic viability of the Atlantic fisheries sector by expanding the commercially exploitable resource base, reducing operating cost, increasing product value, and developing new products and markets.

### AUTHORITY

The Fisheries Development Act.

### DESCRIPTION

Expenditures on this program are limited to Atlantic Canada.

The program has three components: Development Planning and Analysis, Technological Development, and Program Implementation.

Development Planning and Analysis

This is primarily a planning component which develops specific fishing industry development targets and 1-5 year strategies by 24 geographic planning areas on the Atlantic coast.

Technological Development

This group concentrates on developing new fishing technology, testing and modifying known technology, and transferring these technologies to the fishing industry. Examples of such projects include: exploratory fishing to develop new exploitable resources; development of technology to improve fish quality; and projects to improve the efficiency and reduce costs of fishing.

Program Implementation

This group implements special or short term programs which either fund the total cost of fisheries facilities and equipment, or provide cost-sharing grants for such projects to fishermen or processors. These programs include the Special Recovery Capital Projects, various employment programs, the Atlantic Fisheries Ice-Making Infrastructure Program, and development programs for specific areas such as in Quebec, coastal Labrador, southeast New Brunswick and Prince Edward Island. Projects funded include ice-making and storage facilities, vessel upgrading, and unloading facilities, fish handling containers, etc.

## BENEFICIARIES

The fishing industry on the Atlantic as a whole, and particularly fishermen towards which the majority of programs are directed. As well, there are also spin-off benefits for the fishing equipment manufacturing sector, equipment suppliers, contractors and some employment benefits.

## EXPENDITURES ($000's)

Regular Program[1]

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| Total PYs | 46 | 51 | 51 | 51 | 51 |
| Salaries | 1,738 | 1,938 | 1,938 | 1,938 | 1,938 |
| Other O&M | 5,622 | 5,796 | 5,796 | 5,796 | 5,796 |
| Capital | 572 | 570 | 570 | 570 | 570 |
| Grants/ Contributions | 1,509 | 1,362 | 1,362 | 1,362 | 1,362 |
| **TOTAL** | 9,441 | 9,666 | 9,666 | 9,666 | 9,666 |

[1] Includes expenditures on Salmon Buy-Back Program.

Provincial Distribution

| | **83/84** | | **84/85** | | **85/86** | |
|---|---|---|---|---|---|---|
| | PYs | ($000s) | PYs | ($000s) | PYs | ($000s) |
| Newfoundland | 9.0 | 2,942 | 10.5 | 2,759 | 10.5 | 2,645 |
| P.E.I. | 1.0 | 75 | 7.5 | 65 | 1.5 | 188 |
| Nova Scotia | 16.0 | 2,414 | 17.0 | 1,839 | 17.0 | 1,785 |
| New Brunswick | 7.0 | 981 | 7.0 | 854 | 7.0 | 802 |
| Quebec | 4.0 | 1,131 | 5.0 | 1,051 | 5.0 | 1,048 |
| **TOTAL** [1] | 37.0 | 7,543 | 47.0 | 6,568 | 41.0 | 6,468 |

[1] Excludes salary dollars.

**OBSERVATIONS**

Several years ago the Department of Fisheries and Oceans (DFO) decided to limit this program to the harvesting sector, with a particular focus on the inshore/nearshore sector of the fleet. This resulted, for example, in the closure of that part of the Halifax fisheries laboratory dealing with processing development. The rationale was that fish processing companies could do their own research and development. Recent projects, however, indicate that this program is shifting back in part towards assisting the processing sector and offshore vessel owners.

Possibly the most effective harvesting development of this branch was the introduction of mid-winter trawling to the Canadian fleet during the mid-1960s. This fishing method, which originated in Germany, proved to be so effective in catching fish that it was subsequently banned by the department. Since there is still significant harvesting overcapacity in Canada, most projects have been redirected away from improving fishing efficiency and towards other goals such as improving fish quality and energy efficiency.

All the Atlantic provinces have similar development programs, with both technical staff to undertake development projects, and financial assistance programs for similar types of projects, such as those relating to quality improvement. Nova Scotia, for example, spends in excess of $2 million per year on such industrial development programs.

Some federal programs duplicate provincial ones. In Nova Scotia, for example, both governments were involved in the development of small boat pair-trawling. This was followed by conflict over who should take the credit. Similarly, both governments provided grants to the industry for the purchase of insulated fish containers, resulting in officials having to check with each other so that recipients would not receive double funding. Generally, however, whenever the federal government begins a grant program in an area such as ice-making facilities, the province will terminate its own program because of the larger federal resources and more generous grants.

There is relatively little fisheries-related research and development work being done by the private sector in Canada. One reason is that little fishing and fish processing equipment is manufactured here. Most rope, nets, fish hooks, electronics, winches, engines, processing machinery and the like are imported from Norway, the U.S. and Japan.

National Sea Products Ltd. is the only fishing company in Canada with a research and development laboratory. There are also a few other organizations that provide such a service, such as NORDCO in Newfoundland and the Canadian Fisheries Institute in Nova Scotia. All these fisheries laboratories receive a large part of their funding from the federal government through a variety of departments such as NRC, DSS, DRIE and DFO.

## ASSESSMENT

Funding for the Program Implementation component comes from a variety of short-term regional programs with broad objectives, including employment. Projects and resource allocations have traditionally been influenced by regional socio-economic concerns. As a result, resources are often not directed where most needed for the rational development of the industry. In fact, some grants or projects lead to further overcapacity in the industry and are therefore counter-productive.

Grants covering all or part of the cost of a fisheries facility or equipment item are usually not provided to everyone because of limited resources and the short term nature of such programs. This usually leads to competitive disadvantages since some operators pay the full cost of facilities such as ice machines, whereas others pay only a portion or nothing at all. The net effect of such programs has been that many companies are not willing to make any substantial investment without a government grant, even if the investment can be justified on its own financial merit.

Not enough thought is given to the subsequent operation and maintenance cost of facilities whose construction is fully funded under these programs. A significant number of new, costly facilities are idle because local fishermen will not assume the responsibility for their operation. In some cases, the government is being forced to operate them at a loss.

Coordination of technical and financial assistance programs between the federal and provincial fisheries departments is not particularly effective, in part because there is always a natural element of competition and suspicion in areas of overlap.

Very few, if any, significant fishing methods or equipment have been developed in Atlantic Canada by anyone, including both government and industry. Most so-called technical work consists of transferring or adapting technology developed elsewhere.

Even if current technology development programs are not supposed to increase fishing power, it is very difficult, if not impossible, to separate cost reduction goals from efficiency improvement ones. Some recent fishing gear development projects can be questioned on this basis, such as those relating to improved scallop rakes, automated scallop shucking, power reels for Danish seiners, etc.

The greatest successes of this technical program have been the development of new fisheries. For example, DFO can be complimented for actually having started the important snow crab fishery in the Gulf of St. Lawrence about 15 years ago, and the more recent development of the Newfoundland crab fishery. By now, however, most fisheries resources on the Atlantic coast have been well surveyed and evaluated for their commercial feasibility. Most fisheries not now exploited by Canadians require harvesting by factory-freezer trawlers and this technology has been banned to date for Canadians.

Program priorities and the selection of projects can be questioned. Although there are industry advisory mechanisms in place, their effectiveness is questionable since many in the industry disagree with current resource allocations. For example, even though parasite detection and removal is one of most serious problems in the fishery, the resources being devoted to this are relatively miniscule.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Reducing person-years and related salary expenditures on the regular Atlantic Fisheries Development Program by 75% and reducing other O&M expenditures by 50%. This should be achieved by:

    a. terminating the Development Planning and Analysis part of this program, since industry development strategies should be the responsibility of the private sector; and
    b. reducing the Technological Development part by:
        - focusing on technical problems or opportunities which are of national significance such as parasite detection and removal;
        - contracting out projects, for the most part, to the private sector or to technology centres outside the federal government;
        - selecting projects more in accordance with industry priorities; and cost sharing projects with the industry to the extent possible.

b. Terminating all programs which provide direct financial grants or subsidies to the fishing industry.

c. Disposing of government-owned facilities or equipment which require ongoing management and operation, such as ice-making facilities, to the private sector as soon as possible. No other such facilities should be constructed.

## ERDA FISHERIES SUBSIDIARY AGREEMENTS

### OBJECTIVE

To improve the economic viability of the fishing sector through infrastructure improvement, resource development, harvesting and processing sector development, and Native fisheries development.

### AUTHORITY

Fisheries Development Act, Economic and Regional Development Agreements, (ERDAs).

### DESCRIPTION

These subsidiary agreements have been signed with the provinces of N.B., N.S., P.E.I., and negotiations are continuing with Quebec. The specific program structure in each agreement reflects each province's development priorities, as well as the federal priorities for that particular area.

The total amount of each agreement and the federal share is as follows:

| | **Total** ($M) | **Federal Share** ($M) |
|---|---|---|
| N.B. | $45 | $25.0 |
| N.S. | 50* | 35.0 |
| P.E.I. | 10 | 7.5 |
| Quebec** | 48 | 33.5 |

*Original agreement with N.S. was for a $35 million federal share, of which only $20 million is currently approved (to FY 1988/89). The need for the balance ($15 million) will be reassessed in year two by both governments, and will depend on industry need and availability of funds at that time.

**Proposed agreement focused primarily on the North Shore of Quebec.

## Allocation of Federal Expenditures ($000's)

### Activities by Province

| | N.B. 84/85-88/89 | N.S. 85/86-88/89 | P.E.I. 84/85-88/89 | Quebec 85/86-89/90 | Total |
|---|---|---|---|---|---|
| Infrastructure[1] | 6000 | 5900 | 2000 | 25000 | 38900 |
| Resource Dev.[2] | 6000 | 1500 | 2000 | 1000 | 10500 |
| Harvesting Sector Dev.[3] | 8400 | 5300 | 2000 | 6000 | 21700 |
| Processing Sector Dev.[4] | 2100 | 5800 | 500 | - | 8400 |
| Native Fisheries Dev.[5] | 500 | - | | - | 500 |
| Admin./technical Studies | 2000 | 1500 | 1000 | 1500 | 6000 |
| **TOTAL** | 25000 | 20000 | 7500 | 33500 | 86000 |

[1] Includes: ice facilities, harbour facilities, water and power, handling and off loading equipment, and service centres.

[2] Includes: aquaculture (finfish and shellfish), commercial resource surveys, hatchery expansion, habitat enhancement.

[3] Includes: assistance for vessel upgrading, conversion and replacement.

[4] Includes: new product development, in-plant quality control systems and market testing.

[5] Includes: diversification of Native fisheries in N.B..

## BENEFICIARIES

Fishermen and processors in those provinces which have signed such agreements.

**EXPENDITURES (total for 4 agreements) ($000's)**

| | **84/85** | **85/86** | **86/87** | **87/88** |
|---|---|---|---|---|
| PYs | 6 | 37 | 39 | 39 |
| Salaries | 157 | 1,349 | 1,444 | 1,440 |
| Other O&M | 303 | 1,478 | 1,650 | 1,775 |
| Capital | 130 | 2,990 | 7,050 | 5,385 |
| Grants/ Contributions | 202 | 12,390 | 10,070 | 14,800 |
| **TOTAL** | 792 | 18,207 | 20,214 | 23,400 |

**OBSERVATIONS**

All these agreements are based on the concept of "parallel delivery", in that each level of government delivers and pays for its own programs. Coordination of these programs is through a federal/provincial management committee.

The provinces expressed some common concerns with these agreements, which included:

a. the Department of Fisheries and Oceans (DFO) was hiring additional staff to implement their programs, whereas the provinces were implementing their programs with existing staff;

b. DFO was using such agreements as a new source of funding for projects previously funded under temporary programs such as the Special Recovery Program and various employment programs, or to continue projects which would otherwise be terminated because of limited A-Base funding; and

c. DFO was using ERDA funds to increase their presence in an area deemed to be primarily in the provincial domain, such as aquaculture.

Most provinces, however, seemed willing to accept such irritations because these agreements result in additional federal funds.

The fishing industry in the provinces had little, if any, input in the ERDA planning process. Most successful ERDAs subsidiary agreements in other sectors, such as agriculture, have had significant industry participation in the planning process.

The industry did not express a specific need for the ERDAs programs, except perhaps that ERDAs allowed the continuation of some programs previously funded under other programs. In fact, numerous reservations and concerns were expressed, including:

a. the view that some programs were inappropriate. For example, the Salmon Buy-Back Program is aimed at eliminating the commercial fishery;

b. the usefulness of some programs was questionable, such as one proposed in N.B. to subsidize truck owners to insulate or refrigerate trucks, supposedly to improve the quality of transported fish;

c. many of the subsidy programs would actually assist smaller operators to expand their operations, thereby leading to further overcapacity and instability in the industry. The Seafood Producers Association of Nova Scotia, for example has refused to participate in any ERDA planning process for this reason; and

d. direct subsidy programs increase Canada's susceptability to countervail action by the U.S.

Generally, ERDAs seem to be perceived as "political instruments" more than addressing the development needs of the industry.

It is noted that a fisheries subsidiary agreement has not been signed with Newfoundland.

## ASSESSMENT

The fisheries subsidiary agreements have not been based on a single and explicit national objective, such as the forest renewal goal which is common to all forestry ERDAs. Although the objectives of these agreements have the common theme "to improve the economic viability of the industry", this has been interpreted to include practically everything relating to the industry. Programs range from protecting the resource (e.g. salmon); developing new industry (aquaculture), harvesting, harbour infrastructure, processing, other sectors (e.g. shipyard modernization in N.B.); product development and marketing (e.g. advertising seafood in N.S.). Quite simply, these ERDAs appear to be used, for the most part, by both the provinces and the federal department as an alternate source of funding to continue or expand their previous programs.

These programs, in most cases, are simply another direct subsidy to the industry, thereby doing as much potential harm as good in the long term. As well, since there are no specific or quantified development objectives it will be difficult, if not impossible, to evaluate the extent to which such objectives will be achieved.

These agreements have not significantly clarified federal/provincial roles in the fisheries nor have they improved the harmonization of programs. In fact, in some cases it has led to further duplication and potential conflicts. For example, in one agreement, the federal department will deliver the aquaculture component whereas in another agreement, the province will deliver most of the aquaculture programs. As another example, under one agreement, the federal department is planning to provide grants for fishing vessel conversions to improve fuel efficiency. The province has had an identical program in place for many years, and rather than allow such duplication, they are now planning to terminate their program.

## OPTIONS

The study team recommends to the Task Force that the government consider immediately initiating negotiations with those provinces that have Fisheries Development Agreements in order to:

a. Significantly reduce or eliminate the total funding levels of the agreements.

b. Develop more specific and focused objectives.

c. Achieve more industry input in what such objectives should be, and subsequently what types of programs are most needed.

d. Delegate as much of the direct delivery of programs as possible to the provinces.

The government should consider reducing the person-years allocated to this program to the 1984/85 level of six as compared to the 37 PYs allocated to this program in 1985/86.

# NEWFOUNDLAND BAIT SERVICE

## OBJECTIVE

To ensure a supply of bait to shore-based fishermen in Newfoundland.

## AUTHORITY

Terms of Union between Canada and Newfoundland-Section 31(G).

## DESCRIPTION

The federal government must continue its responsibility for the Newfoundland bait service under the Terms of Union between Canada and Newfoundland.

Fisheries which utilize bait (crab, lobster, longlining) are spring to late fall fisheries. Bait fisheries (mackerel, squid) are fall fisheries, thus requiring freezing and long periods of storage.

The distribution points for bait are widely dispersed requiring storage, transportation and distribution facilities.

The Newfoundland bait service has 14 depots, and 23 operational holding units, with 10 more under construction in Labrador, 2 refrigerated trucks, 2 repair shops, and a head office. Over several years the Canadian Saltfish Corporation has operated many locations for the service, and in 1985 will operate all facilities under contract to the Department of Fisheries and Oceans (DFO).

A Quebec bait service was initiated in 1983. Eight bait facilities were constructed and four refrigerated trucks were acquired during 1984 and 1985. The Quebec Processors Association has been contracted to operate this service during 1985, at a subsidy cost of $600,000.

The current selling price of bait in Newfoundland is $0.17 per pound regardless of species. This compares to commercial prices in Atlantic Canada of $0.35 on average.

**BENEFICIARIES**

Inshore fishermen benefiting from this program in Newfoundland/Labrador numbered 16,426 and in Quebec 1,639.

**EXPENDITURES ($000's)**

**Quebec and Newfoundland**

| | **83/84** | **84/85** | **85/86** | **86/87** | **87/88** |
|---|---|---|---|---|---|
| PYs | 39 | 41 | 48 | 44 | 44 |
| Salaries | 832 | 712 | 1,334 | 1,174 | 1,174 |
| Other O&M | 5,245 | 2,197 | 5,016 | 2,100 | 2,200 |
| Capital | 245 | 7,170 | 4,472 | 30 | 30 |
| **TOTAL** | 6,322 | 10,079 | 8,822 | 3,304 | 3,404 |
| Revenue (Sale of bait) | 1,253 | 1,135 | | | |
| Net Subsidy | 5,069 | 8,944 | | | |

**OBSERVATIONS**

The Newfoundland bait service was initially expanded beyond its original mandate by shipping bait to Quebec at only transportation costs. This bait was subsequently sold at commercial rates. This was the precursor of the Quebec bait service.

Measures are under way to reduce costs in the bait service. In Newfoundland, it is intended to reduce the percentage of frozen bait purchased from 95% to 70% of total purchases. The bait then purchased in the fresh form would be frozen in the service's own units. It is estimated this could reduce costs by 18%.

When domestic bait supplies were unavailable in the past, bait was purchased at relatively low prices or obtained free from offshore markets or from foreign fleets in return for allocations of fish within Canada's 200-mile zone.

Supplying subsidized bait in selected areas of Atlantic Canada gives the fishermen in these regions a competitive advantage over those in other areas, since the end product is sold in similar markets and at the same market price.

## ASSESSMENT

The Newfoundland bait service is a federal obligation under the Terms of Union that must be maintained. No obligation exists to expand the service to other areas such as Quebec. As well, there is no obligation to subsidize this service.

The bait service required 41 PYs in 1984 to operate and since the bait is sold below cost, the net loss in that year was $8.9 million for an average $619 subsidy per fisherman.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Continuing the Newfoundland bait service but discontinuing any expansion of bait services to other geographic regions.

b. Privatizing the existing Quebec bait service as soon as possible.

c. Removing the subsidy element of the Newfoundland system by increasing the price of bait over the next three years to reach the break-even point by 1987/88. Such pricing should include amortizing capital expenditures.

d. Continuing to contract out the full operation of this service to the private sector or to a corporate entity such as the Canadian Saltfish Corporation. The 48 PYs currently allocated to this program within DFO should therefore be eliminated.

e. Not allocating fish resources from within Canada's 200-mile economic zone to any foreign or domestic company in return for such companies providing free or subsidized bait to the Newfoundland bait service.

## FISHERIES PRICES SUPPORT BOARD

### OBJECTIVE

To promote the financial stability and independence of fishermen and permit processors to continue operations by reducing the adverse effects of wide fluctuations in market prices.

### AUTHORITY

Fisheries Prices Support Act.

### DESCRIPTION

Reporting to the Minister, Department of Fisheries and Oceans, (DFO) the Fisheries Prices Support Board (FPSB), is responsible for investigating and when appropriate, recommending action to support prices of fishery products where declines are being experienced. Subject to approval by the Governor-in-Council, FPSB is empowered to implement two types of programs:

> **Deficiency payments** (in effect price subsidies) representing the difference between a prescribed price and the average market price.
>
> **Inventory financing** (where quantities of products are removed temporarily from the market). Such products are sold back to the original suppliers at cost, when market conditions have improved. Such "Buy Programs" aim at cost recovery, with suppliers required to pay storage and handling fees, in addition to the contracted price for the product.

Since 1981, deficiency payments and inventory financing programs have not been included in Main Estimates. As a result, the Board must compete on a case-by-case basis for funds from the Economic and Regional Development policy reserve. On occasion a portion of the departmental A-Base has been temporarily frozen in order to implement programs.

In addition to these activities the FPSB routinely purchases canned mackerel from Canadian processors for use in international food aid and development programs administered by CIDA. This program is covered in Main Estimates ($3.5 million) and the cost is recovered from CIDA when the product is delivered.

In 1983/84, a deficiency payment program was put in place by FPSB for hunters of seal pelts who were then experiencing the first year of the European ban on seal pelt imports and the consequential collapse of fur prices.

## BENEFICIARIES

The prime program beneficiaries are fishermen and fish processors. Regional distribution of benefits were as follows:

**Purchases**
**($000's)**

| | Cod Blocks | | Mackerel | | Herring | |
|---|---|---|---|---|---|---|
| | 83/84 | 84/85 | 83/84 | 84/85 | 83/84 | 84/85 |
| Nfld. | 1500 | 307.5 | - | 262.9 | - | - |
| P.E.I. | - | - | - | 17.4 | - | - |
| N.S. | 132.2 | - | - | - | - | 1174.6 |
| N.B. | 10.8 | - | - | 661.2 | - | 1412.3 |
| Que. | 767.9 | 165 | 919.8 | 1082.9 | - | 27.3 |
| N.W.T. | - | - | - | - | - | - |
| **TOTAL** | 2411 | 472.5 | 919.8 | 2024.4 | 0 | 2614.2 |

**Grants/Contributions**
**($000's)**

| | Seal Pelts | | Headed and Gutted Cod | |
|---|---|---|---|---|
| | 83/84 | 84/85 | 83/84 | 84/85 |
| Nfld. | 511.8 | - | - | 149 |
| P.E.I. | - | - | - | - |
| N.S. | 60.8 | - | - | - |
| N.B. | - | - | - | - |
| Que. | 64.3 | - | - | - |
| N.W.T. | 88.9 | - | - | - |
| **TOTAL** | 725.8 | 0 | 0 | 149 |

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Salaries | 126.7 | 133.1 | 135 | 135 | 135 |
| Other O&M | 320.2[1] | 1,337.6[1] | 20 | 20 | 20 |
| Grants/ Contributions | 725.9 | 149. | 250. | - | - |
| **TOTAL** | 1172.8 | 1,619.7 | 405[2] | 155[2] | 155[2] |

[1] Difference between purchases and sales of cod blocks and herring under "Buy Programs". Sales of 1984/85 inventories are continuing.

[2] Program funds under other O&M and Grants/Contributions from 1986 to 1988 are not included in Main Estimates, but provided through Supplementary Estimates as required by Cabinet. At this moment, no Price Support programs are proposed, and the budget reflects only seal pelt carry-over for 1985-86.

## OBSERVATIONS

During the consultation process, concern was expressed over the length of time between when the industry requests price support and when it is received. This is in part due to the decision in 1981 to no longer provide funding for the Board in Main Estimates, but rather to require it to seek funding on a case-by-case basis from the policy reserve. This was balanced by concerns that a Board funded with annual appropriations might become too pro-active in initiating programs and would evolve into a form of marketing board - a mechanism which is universally opposed by the industry. It was emphasized that price support initiatives must result from specific requests by the industry and not as a result of political or bureaucratic interventions. This has not always been the case.

Apprehension was expressed that the activities of the Board, along with other federal initiatives in the fisheries, could give rise to countervail measures by the

U.S. However, it was felt that some mechanism is required to protect fishermen and processors from wide temporary fluctuations in market prices.

The $1.3 million dollar spread in 1984/85 between purchases and sales relates to a herring "buy" program and results from the Board's purchase price being set considerably higher than prevailing market prices. Little activity in cod block purchases in 1984/85 reflects the fact that when the program was finally initiated, the price offered by the Board was $1.10 (minus storage and service charges) while the market price was $1.20-$1.25. Therefore, it was more advantageous for producers to sell to the market rather than the Board. The cod blocks which were purchased, were sold to the East Bloc at a loss.

## ASSESSMENT

While a major thrust of the study team's recommendations is for less government intervention in the fishery, a need appears to exists, at least in the immediate future, for some mechanism to assist the industry when temporary declines in prices result in huge product inventories, and to avoid the further price declines which would result from the mass selling of inventories. The Fisheries Prices Support Board is the only stabilization program for the fishery and the industry does not have other traditional means of obtaining interim financing, such as a commodity futures market. The existence of numerous stabilization programs for the agricultural sector is also noted.

While some delay results from the need to seek funding approvals on a case-by-case basis, this approach is considered preferable to a Board which operates with an annual appropriation. Approvals for program initiatives should only result from a specific request by the industry.

The Board should confine its activities to inventory financing programs as compared to subsidy or deficiency payments. This form of assistance is seen as reducing the threat of countervail action, and appears to meet the immediate needs of the industry while still requiring the industry to ultimately sell at prevailing market prices.

When inventory financing programs are initiated, the full cost of the program should be recovered, including salary costs. The Board should refine its procedures for determining "buy" prices so that they relate more closely to prevailing market prices. This would avoid the problems that resulted from the herring and cod block programs in 1984/85.

While the routine purchase of canned mackerel provides a valuable market for this product, this activity does not appear to fit with the Board's primary mandate. CIDA's purchases of canned mackerel should be handled through Supply and Services and normal tendering procedures followed.

The activities of the Board should be confined to fish products. Initiatives such as grants/subsidies to sealers should not be handled by the Board. The study team has been advised that grants to sealers have been discontinued and it is not intended that the Board become involved in such initiatives in the future.

## OPTIONS

The study team recommends to the Task Force that the government should consider:

a. Maintaining the Fisheries Prices Support Board, at least for the near future, but restricting its operation to only temporary and non-recurring inventory financing.

b. Ensuring that the Board operates on a full cost recovery basis, including administration costs, and thereby not increasing the industry's susceptability to countervail action.

c. Ceasing any Board activity relating to deficiency or subsidy payments.

d. Ceasing the routine purchase by the Board of canned mackerel for CIDA. Such purchases by CIDA should be through the normal tendering process as used for other fish products.

e. Confining the activities of the Board to specific requests by the fishing industry.

f. Reviewing the continuing need for such a Board after five years, in light of the overall thrust of the study team's recommendations to allow the industry to function under true market forces.

The Board should continue to compete on a case-by-case basis for funds from the Economic and Regional Development policy reserve.

## FISHERIES IMPROVEMENT LOANS

### OBJECTIVE

To facilitate the availability of credit to fishermen for a variety of fisheries improvement projects including vessels, engines, gear, vehicles, major overhauls and shore installations.

### AUTHORITY

Fisheries Improvement Loans Act. The Act was recently amended to establish a new lending period from July 1, 1985 to December 31, 1986 with the aggregate amount of loans to be guaranteed set at $30 million for the period.

### DESCRIPTION

To encourage lenders to make loans to fishermen, the federal government is authorized to guarantee lenders against loss incurred on loans made. The maximum rate of interest is set at 1% over prime and the rate floats with the prime rate for the term of the loan. The maximum amount of loan guarantees that a fisherman may have outstanding under the program is $150,000. Maximum repayment term is 15 years.

The federal government's contingent liability is limited by the amount of the loan pool and loan period and by the amount of guarantee - 90% of first $125,000, 50% of next $125,000 and 10% of remainder, to each lending institution.

This program is similar in design to the Farm Improvement Loans Act and the Small Business Loans Act. Fishermen are excluded from seeking assistance under the provisions of the Small Business Loans Act.

**BENEFICIARIES**

Canadian commercial fishermen.

**No. of Loans**

| | 80/81 | 81/82 | 82/83 | 83/84 | 84/85 |
|---|---|---|---|---|---|
| B.C. | 458 | 196 | 216 | 201 | 306 |
| Ont. | 32 | 15 | 17 | 13 | 13 |
| Que. | 12 | 8 | 9 | 60 | 62 |
| N.B. | 84 | 40 | 25 | 68 | 50 |
| N.S. | 103 | 104 | 94 | 173 | 162 |
| P.E.I. | 135 | 95 | 131 | 187 | 195 |
| Nfld. | 494 | 242 | 251 | 305 | 201 |
| **TOTAL** | 1,318 | 700 | 743 | 1007 | 989 |

**Value of Loans**
**($)**

| | 80/81 | 81/82 | 82/83 | 83/84 | 84/85 |
|---|---|---|---|---|---|
| B.C. | 16.1 | 7.8 | 6.1 | 6.7 | 6.7 |
| Ont. | 1.1 | 0.6 | 1.2 | 1.0 | 1.0 |
| Que | 0.2 | 0.2 | 0.3 | 0.6 | 0.9 |
| N.B. | 0.8 | 0.7 | 0.4 | 1.4 | 0.5 |
| N.S. | 2.0 | 1.7 | 1.7 | 3.0 | 2.8 |
| P.E.I. | 0.9 | 0.5 | 0.8 | 1.6 | 2.0 |
| Nfld. | 2.4 | 1.0 | 0.9 | 1.7 | 1.0 |
| **TOTAL** | 23.4 | 12.5 | 11.4 | 16.0 | 14.9 |

**Distribution of Loans**
**(% of Total)**

| | 80/81 | 81/82 | 82/83 | 83/84 | 84/85 |
|---|---|---|---|---|---|
| B.C. | 68 | 62 | 53 | 42 | 45 |
| Ont. | 5 | 5 | 10 | 6 | 7 |
| Que | 1 | 2 | 3 | 4 | 6 |
| N.B. | 3 | 6 | 4 | 9 | 3 |
| N.S. | 9 | 13 | 15 | 19 | 19 |
| P.E.I. | 4 | 4 | 7 | 10 | 13 |
| Nfld. | 10 | 8 | 8 | 10 | 7 |
| **TOTAL** | 100 | 100 | 100 | 100 | 100 |

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 2 | 2 | 2 | 2 | 2 |
| Salaries | 59 | 63 | 66 | 69 | 72 |
| Other O&M | 31 | 25 | 25 | 25 | 25 |
| Capital | 2 | 1 | - | - | - |
| **TOTAL** | 72 | 89 | 91 | 94 | 97 |
| Claims expected to be paid from CRF ($M) | 4.0 | 2.5 | 2.0 | 1.5 | 1.0 |

Note: Claims of $9.9 million have been paid from the Consolidated Revenue Fund on guaranteed loans of $227 million from 1955-1985.

## OBSERVATIONS

Authority for the Fisheries Improvement Loans program was scheduled to expire in June 1985. Authority has recently been extended to December 31, 1986.

## ASSESSMENT

Credit extended under this program is in addition to credit provided by provincial loan boards. As a result, fishermen can enter the industry or replace equipment with very little personal investment.

A major problem in the fisheries, which has been identified by many studies, is overcapacity with too many fishermen pursuing too few fish. This program can be seen as adding to this problem, and is inconsistent with federal programs to buy back fishing licences to reduce efforts in the industry.

The effect of this program is to subsidize low-risk fishermen who would be able to obtain credit through normal channels, as well as high-risk fishermen who are required to put up little of their own money.

## OPTIONS

The study team recommends to the Task Force that the government consider termination of the Fisheries Improvement Loans Program. A major thrust of the study team's recommendations is for less federal government intervention in the fisheries, and for allowing the industry to function in response to true market forces. To the extent that financial assistance is required by fishermen, this can be obtained from provincial loans boards or financial institutions. The determination of whether assistance is provided should be based on sound economic/business considerations.

## FISHING VESSEL ASSISTANCE

### OBJECTIVE

To assist fishermen in financing the initial capital outlay in replacing, modifying or converting fishing vessels.

### AUTHORITY

Fishing Vessel Assistance Regulations made under the Fisheries Development Act.

### DESCRIPTION

The program operates in the Atlantic and freshwater fisheries (British Columbia is excluded from the program) and provides a contribution of 25% of the replacement cost to a maximum of $125,000 for steel vessels and $100,000 for other vessels. Vessels from 16 ft. to 75 ft. in length qualify for this program. (For vessels over 75 ft. a subsidy was provided to the ship builder by the Department of Regional and Industrial Expansion). However, termination of this program is being recommended by the Study Team on Services and Subsidies to Business. Applications for assistance are approved by the Minister with DFO regional and area offices administering contribution agreements.

### BENEFICIARIES

Fishermen and the boat building industry.

**Vessels Subsidized**

| | 82/83 | 83/84 | 84/85 |
|---|---|---|---|
| Nfld. | 64 | 378 | 229 |
| N.S. | 79 | 61 | 96 |
| N.B. | 105 | 61 | 320 |
| P.E.I. | 84 | 89 | |
| Que. | 20 | 0 | 51 |
| Ont. | 7 | 17 | 12 |
| Prairies/North | 82 | 37 | 70 |
| **TOTAL** | 441 | 644 | 778 |

**Amount of Subsidy**
**($000's)**

| | 82/83 | 83/84 | 84/85 |
|---|---|---|---|
| Nfld. | 826 | 1802 | 456 |
| N.S. | 969 | 1,538 | 1,370 |
| N.B. | 1,658 | 1,899 | 3,126 |
| P.E.I. | 600 | 1,599 | |
| Que. | 759 | 602 | 1,520 |
| Ont. | 178 | 200 | 116 |
| Prairies/North | 104 | 61 | 132 |
| **TOTAL** | 5,096 | 7,702 | 5,350 |

**Average Subsidy**
**($000's)**

| | 82/83 | 83/84 | 84/85 |
|---|---|---|---|
| Nfld. | 12.9 | 4.8 | 1.9 |
| N.S. | 12.3 | 25.2 | 14.3 |
| N.B. | 15.8 | 30.6 | 5.5 |
| P.E.I. | 7.1 | 17.9 | |
| Que. | 37.9 | – | 29.8 |
| Ont. | 25.5 | 11.8 | 9.7 |
| Prairies/North | 3.0 | 2.6 | 1.9 |
| **TOTAL** | 11.6 | 11.9 | 6.9 |

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 14 | 14 | 12 | 12 | 12 |
| Salaries | 415 | 432 | 381 | 392 | 404 |
| Other O&M | 161 | 168 | 148 | 152 | 157 |
| Grants/ Contributions | 7,700* | 5,350* | 1,980* | 1,980* | 1,980* |
| **TOTAL** | 8,276 | 5,950 | 2,509 | 2,524 | 2,538 |

* A-Base funding was set at $1.98 million in 1981 as the result of an expenditure reduction exercise. Historically, demand for assistance has exceeded this amount and the department has been successful in obtaining approval for incremental funding.

## OBSERVATIONS

This form of federal assistance is in addition to assistance offered by provincial loan boards. While this program was designed to assist fishermen, the opinion was expressed during the consultation process that one of the effects of the program has been to increase the price of boats. Despite a 25% tariff on foreign boats under 100 feet in length, in many cases it is still cheaper to import vessels than to have them built in Canada.

Concerns were also expressed during the consultation process that this form of assistance, along with several other federal programs, could result in countervail action by the U.S. Countervail procedures by U.S. fishermen have since been initiated.

## ASSESSMENT

Numerous studies have pointed out that the Canadian fishing industry suffers from a serious problem of overcapacity. It can be argued that assistance in the form of grants adds to this over capacity problem. Furthermore, this program is inconsistent with other federal programs such as licence-buybacks which are aimed at reducing fishing capacity.

This program overlaps with loan programs offered by provincial loan boards as well as the federal fisheries improvement loans program, and enables fishermen to increase capital investment in the fishing industry with minimal personal investment. This has resulted in over-investment in bigger and more sophisticated vessels where less expensive equipment would be more beneficial from a return on investment basis. The decision to re-invest in capital equipment or upgrade equipment should be based solely on business/economic factors and not on the amount of government assistance.

This program was not supported by any of the numerous representatives of the fishing or fish processing sectors consulted on this matter.

## OPTIONS

The study team recommends to the Task Force that the government consider terminating the Fishing Vessel Assistance Program. This option is consistent with a major thrust of the study team's recommendations: namely, to put the fisheries on a sound economic basis and to allow market forces to operate with less government intervention.

## FISHING VESSEL INSURANCE PLAN

### OBJECTIVES

The Fishing Vessel Insurance Plan, in operation since July 1953, is designed to protect fishermen from abnormal capital losses at reasonable costs, and provide a measure of credit by protecting their capital assets (boats). The program provides insurance to fishermen where it is not available commercially, particularly in remote areas.

### AUTHORITY

Vote 540 of Appropriation Act No. 5, 1955 and subsequent amendments and Fishing Vessel Insurance Regulations.

### DESCRIPTION

Currently the program is administered entirely by Department of Fisheries and Oceans (DFO) personnel who appraise vessels, survey damages, settle claims, arrange premiums and carry out related work. The plan is operated on a non-profit basis but administrative costs have historically been excluded.

### BENEFICIARIES

Fishermen. The program insures about 22% of Canadian fishing vessels. This represents about 60% of insured Canadian fishing vessels. The number of vessels insured by region, as of May 31, 1985 is as follows:

| Region | No. of Policies | Insured Value ($M) |
|---|---|---|
| Nfld. | 1,395 | 42.8 |
| Scotia/Fundy | 2,008 | 103.5 |
| Gulf | 1,767 | 89.8 |
| Quebec | 897 | 57.4 |
| Ontario | 198 | 9.9 |
| Prairies | 894 | 6.6 |
| Pacific | 1,212 | 50.9 |
| **TOTAL** | 8,371 | 361.0 |

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 44 | 44 | 12 | 12 | 12 |
| Salaries | 1,694 | 1,745 | 1,796 | 400 | 412 |
| Other O&M | 423 | 436 | 449 | 1,700 | 1,751 |
| **TOTAL** | 2,117 | 2,181 | 2,245 | 2,100 | 2,163 |

Over the life of the program, revenues have exceeded indemnities by some $5 million, excluding direct administration costs of approximately $2 million annually. However, over the last few years, with the economic downturn, claims have increased significantly and have exceeded revenues.

## OBSERVATIONS

This program competes with private sector insurance companies. Evaluations have shown that generally, federal rates were lower than the private sector for smaller vessels and higher for the larger ones. However, the private sector tends not to insure small, high risk vessels and vessels in remote areas.

Evaluations of the program have been critical of the management of the program - insuring vessels on a replacement value rather than appraised value and inconsistencies in the setting of rates relative to risk-rating. The program is financially viable on a national basis but is not self-sufficient in all regions. As a result some regions are subsidized at the expense of others. This prevents the private sector from competing in subsidized regions.

During the consultation process, it was emphasized that there was a need for the federal government to provide this program, particularly in remote areas. Another major factor was that the presence of the federal program would keep the private sector insurers "honest" in determining premiums. However, there was almost uniform support that the program should be fully cost recovered.

Attempts were made by the government in 1978 and in 1984 to discontinue this program, but on each occasion a subsequent decision was made to continue it on the basis that commercial insurers were unable to provide reasonable cost insurance to smaller vessels and to those in remote areas.

In March 1985, when the Minister announced the continuation of the insurance program, he also announced that several changes would be made to place the program on a self-sustaining basis. Such changes included increased premiums for particularly high-risk vessels and increased rates where they had been previously set artificially low. Also announced were a tightening up in appraisal policies and adjustment of claims, increased deductibles for all partial and total losses, as well as other measures designed to bring the Plan more in line with commercial practices.

## ASSESSMENT

Current rates for small vessels are often lower than private sector rates which discourages attempts by insurance companies to engage in this area of business. These low rates are attributable to an insurance scheme that is not operated on a sound actuarial basis - administration costs not recovered, rates not tied to claims, insurance based on replacement rather than actual value, etc.

The two unsuccessful attempts by the federal government, the most recent being in 1984, suggests that another attempt to withdraw, at least in the near future, would be impractical. However, the long-range objective of the federal government should be to withdraw.

In the interim, steps should continue to be taken to put the insurance plan on a sound actuarial basis, including the recovery of all administrative costs.

## OPTIONS

The study team recommends to the Task Force that the government continue planned changes to the Fishing Vessel Insurance Plan to:

a. Put it on a sound actuarial basis.

b. Achieve full cost recovery including administrative costs, by April 1, 1986.

c. Attain partial privatization of the program by transferring activities such as appraisals, writing of policies, and claims settlements to the private sector where possible, with the federal government functioning solely as an underwriter.

The government should also consider establishing as an objective, the termination of this program within three years.

## SALMON ENHANCEMENT PROGRAM (SEP)

### OBJECTIVE

Increase salmon populations in the Pacific region, thereby providing social and economic benefits to the commercial, recreational, and Native fisheries.

### AUTHORITY

Fisheries Act.

### DESCRIPTION

The main species of the B.C. fishery is Pacific salmon. Valued at approximately $500 million annually, the fishery generates more than 12,500 jobs annually, some in remote and Native communities. As well, the salmon sport fishery, with over 300,000 participants, has a significant impact on B.C.'s tourism industry. Native people have traditionally relied on salmon as a staple and for trade for other commodities. Salmon from the B.C. commercial fishery is largely exported, thereby helping Canada's trade balance.

Salmon catches are now at 50% of potential and cannot be maintained or increased without salmon enhancement activities as an integral part of an overall management strategy.

SEP was initiated in 1977, as a federal/provincial program, in recognition of the fact that salmon are a common property resource in which only governments would invest. It uses a wide range of techniques including hatcheries, lake enrichment, fishways, spawning channels, and habitat revitalization to increase freshwater survival of juvenile salmon, which in turn increases adult production.

SEP is a multiple objective program, having five separate objectives:

a. increased national and provincial income;

b. creation of employment opportunities for Canadians;

c. improvement of economic opportunities for Native people;

d. the fostering of development of economically disadvantaged communities and regions; and

e. increased and improved recreational opportunities and protection of the environment.

SEP is accountable to a Government-Industrial Board which advises the Minister on the program. The public is involved in volunteer projects, educational activities, and in a broadly based advisory task force which reports to the Board.

SEP was designed to be undertaken in phases. Phase I was undertaken between 1977 and 1984, and cost $150 million (federal) and $7.5 million (provincial) in addition to existing ongoing federal enhancement funding. It is currently projected to add 19,000 tonnes to the catch when all facilities reach capacity for a benefit cost ratio of 1:5:1. SEP is now in a two-year transition phase costing approximately $75 million (federal) and $3.2 million (provincial) in which Phase I initiatives are being continued and evaluated, habitat revitalization and chinook rehabilitation projects are being undertaken. Plans are being prepared for the continuation of SEP in the context of an overall management plan.

For the planning period 1986/87 through 1990/91, the Department of Fisheries and Oceans (DFO) proposes to spend approximately $200 million (actual) on SEP, in addition to ongoing A-Base funding of approximately $19.6 million which has been approved for the operation of existing major facilities. SEP Continuation funding is required to maintain existing community development, public participation, lake enrichment, and chinook rehabilitation projects with a total capacity of approximately 11,000 tons in the fishery, as well as initiatives which will add approximately 14,000 tonnes more capacity over 5 years.

**BENEFICIARIES**

Beneficiaries include the commercial fishery, the sports fishery, Native people, and the general public.

## ESTIMATED BENEFITS

| | SEP Phase I | SEP Continuation |
|---|---|---|
| Commercial Fishing Industry | 281.3 | 555.1 |
| Indian Fishery | 39.3 | 30.1 |
| Sports Fishery | 104.4 | 26.6 |
| Other Sales - to Government Revenue | 10.5 | UNK. |
| **TOTAL** | 435.5* | 611.8** |

*Present worth 1985 $ millions discounted at 10% to 1976.
**Present worth 1985 $ millions discounted at 10% to 1985.

## EXPENDITURES ($000's)

| | | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|---|
| PYs | A | 257 | 233 | 233 | 213 | 213 |
| | B | - | - | - | 63 | 83 |
| Salaries | A | 8,492 | 8,230 | 8,257 | 7,517 | 7,517 |
| | B | | | | 2,233 | 2,233 |
| Other O&M | A | 13,293 | 22,710 | 21,369 | 8,854 | 8,854 |
| | B | | | | 15,645 | 17,259 |
| Capital | A | 4,593 | 5,400 | 8,200 | 2,200 | 2,200 |
| | B | | | | 12,000 | 17,100 |
| **Sub-Total** | A | 26,378 | 36,340 | 37,826 | 18,571 | 18,571 |
| | B | - | - | - | 29,869 | 36,582 |
| **TOTAL** | | 26,378 | 36,340 | 37,826 | 48,440 | 55,153 |

A - Actual and Approved
B - SEP Continuation Proposal - Additional Resources

## OBSERVATIONS

The early years of enhanced fish production are starting to appear in catch statistics. However, full analysis of SEP benefits are in the preliminary stages. On the available data, it would appear that the forecast volumes of SEP are not being met. Original estimates were for 22,500 tonnes, but new projections call for 19,000 tonnes of production from SEP Phase I. Since hatcheries were not up to full capacity the actual volume being added currently is more in the 11,000 tonne range.

There is some concern that SEP-raised hatchery fish have a negative impact on stock interactions with wild fish, if such fish are caught in a mixed fishery. In the longer term, wild stocks in selected areas could be eliminated, causing long term dependence on enhancement and thus its related costs. Present management programs are trying to minimize this impact.

Enhancement has the possibility of weakening the gene pool of salmon by producing greater volumes from a limited adult stock. The long term implications of this on survival rates are unknown. Management is addressing this by fertilizing single female eggs with several males' sperm.

During the interim SEP period, survival rates from hatcheries are declining from early high levels. Some speculation is that as hatcheries reach toward maximum capacity, overcrowding is affecting the survival rate. Some speculate that rates may continue to reduce, to finally approach wild salmon survival levels. Such a result would reverse the cost benefit ratios as hatchery rearing is more expensive than wild habitat operations.

The lake enrichment portion of SEP has demonstrated positive early results on sockeye enhancement. This program, which is 5% of the budget, may generate up to 50% of the total increased fish volume.

The Community Economic Development Program of SEP is about 10% of the budget and appears to generate about 3% of the fish. The Program has constructed, and operates 16 hatcheries. It also stresses stream clearing and habitat improvement. It has a basic social objective and has produced 266 PYs of Native employment, mostly in isolated communities with high unemployment. The communities involved are very satisfied with it as they feel they are working toward future benefits. The cost benefit analysis shows it to be well below average and likely below the 1:1 ratio.

The Public Involvement Program is about 3.5% of the budget and produces about 1% of the volume. Its key benefits are general public awareness, education material for schools, small egg-rearing and release programs, stream clearing, etc. It is estimated that the DFO PIP officers manage about 7,000 volunteers.

These same officers manage a "small projects" category that involves building spawning channels, stream clearance and works with Indian bands, forestry personnel and the general public. This program is 4% of the budget and produces up to 9% of the fish.

The capital aspects of SEP, while budgeted as one time costs, now require an A-Base account of almost $20 million annually to operate.

SEP has not been adequately integrated into the ongoing operations of the Pacific fisheries organization. The program now reports through the Regional Director-General, and SEP research is not integrated into the Pacific research program. Most people questioned do not envisage SEP as a program that the government can withdraw from at the end of SEP II in 1991. Such integration would require the department to examine its total needs and priorities in B.C.

The privatization of existing hatcheries is an option that should be explored by the department. While the department fears loss of control over such areas as disease prevention and research,the study team does not see these concerns as sufficient to prevent privatization. Japan, for example, which depends almost entirely on hatchery enhancement fish for their successful commercial fishery, has 82% of their hatcheries operating as private businesses, run by fishermen cooperatives or other organizations.

All clientele were adamant that no level of SEP could produce enough fish to satisfy all end users of salmon, and therefore, SEP budgets could not be seen as an alternative to fleet reduction in the Pacific commercial fishery.

SEP I was originally envisaged under a scheme of beneficiary paybacks. The commercial industry argued that no royalties could be absorbed by the industry until the benefits (more fish) were realized. In the mid-1980s, the fish volumes are increasing although still below forecast volumes.

## ASSESSMENT

The Salmon Enhancement Program was designed to serve a series of objectives including increased volumes of fish, Native employment, public involvement and environment. In the opinion of the department, the program is successful. While volumes in the most recent year have not reached forecast, incremental volumes of salmon can definitely be attributed to SEP.

The program is not without risks, some of which are: dependency on SEP for some salmon runs, reduction in the salmon gene pool, and shrinking survival rates at hatcheries. The department is addressing these issues. The program has various components which have different levels of effectiveness, from Lake Enrichment (the most successful) to the Community Economic Development program (the least successful). While the initial expenditures ($150 million) were conceived as a one-time boost to wild stocks, the program is now considered a long term management tool costing $36 million in 1984/85 and 233 PYs. The initial scheme for this incremental program was to have a payback, when the benefits to recipients were obvious (more fish). Now is that time!

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Maintaining the salmon enhancement activities as a continuing long term management tool for the B.C. fishery. SEP should be integrated into the A-Base budget of the Pacific region. This would allow the department to better address priorities in the Pacific fisheries, including the possible need to reallocate research resources more towards salmon. Such integration should reduce the requirement for some of the incremental funding requested for SEP II.

b. Exploring the possibility of privatization of existing hatcheries, while contracting for the fish they produce as a method of reducing SEP costs.

c. Ensuring that future SEP activities minimize hatchery building and capital intensive projects, while emphasizing activities to improve and expand wild stock reproduction.

d. Removing the social program elements from future SEP activities and concentrate on producing the maximum amount of fish for the dollars invested.

e. Developing a cost recovery program to cover part of the SEP expenditures. Such a program should include higher licence fees from the commercial fishery, a special licence fee from commercial sports fishery operators (charter boats, camps) and higher licence fees for recreational fishermen.

f. Ensuring that enhancement of wild stocks remains a fisheries priority in the long term.

g. Ensuring that SEP is not viewed as an alternative to habitat loss for wild stock.

h. Ensuring SEP is not perceived as an alternative to fleet rationalization since no level of SEP could produce enough fish to satisfy all end users of salmon.

i. Not expanding SEP to Atlantic Canada as an integral strategy for Atlantic salmon (see Assessment Notes on sport fishery and aquaculture).

## THE SPORT FISHERY

### OBJECTIVES

To provide federal leadership and direction in the development of policies and programs which conserve and enhance the resource; recognize, through allocation policies, sport fishing as a legitimate, valuable and significant use of fish resources; and maximize the social and economic benefits to Canada from these fisheries.

### AUTHORITY

BNA Act; Fisheries Act and Regulations.

### DESCRIPTION

The federal government exclusively manages the tidal fisheries, the fisheries of the Yukon and the Northwest Territories, and within national parks. The provinces have, to varying degrees, been delegated responsibility for managing the freshwater fisheries within their boundaries.

Fourteen government agencies license anglers across Canada. The ten provinces and two Territories license recreational fishing activity in their respective freshwaters. The federal government licenses sport fishing in the tidal waters of British Columbia. A separate federal licence is required for national parks.

The recreational fisheries contribute significantly to Canadian economy. The 1980 Survey of Sport fishing in Canada, estimated these benefits at over $1.7 billion.

The importance of recreational fishing has caused the Department of Fisheries and Oceans (DFO) to begin placing increasing emphasis on this fishery.

On the West coast, the Minister of Fisheries and Oceans has undertaken extensive consultations with sports fishing groups to determine allocations and a regulatory system which provide maximum sport fishing opportunities, while at the same time working to rebuild the severely depleted salmon resource. The recent Canada-United States Pacific Salmon Treaty affects sport, as well as commercial, interests.

On the Atlantic coast, initiatives have also been undertaken to rebuild the Atlantic salmon resource and to explore ways to finance programs of benefit to the recreational fisheries.

The department carries out extensive biological research on both Atlantic and Pacific salmon which are premier gamefish. As well, the federal government operates salmon hatcheries throughout the Atlantic provinces, and manages, in cooperation with British Columbia, the Salmonid Enhancement Program on the Pacific coast. DFO cooperates with provincial governments in a variety of enhancement and stream survey projects.

In Ontario, DFO monitors water quality in the Great Lakes and operates the Sea Lamprey Control Program which is designed to rebuild important commercial and recreational stocks by reducing lamprey populations. In the Prairies, DFO works with the provinces on a number of joint research and enhancement programs, for example, the Canada-Manitoba Walleye Enhancement Agreement.

Through its Small Craft Harbours Program, DFO maintains approximately 800 recreational harbours and marinas across Canada, many of which are in Ontario where the greatest amount of recreational fishing takes place. The department provides hydrographic charts of many lakes and waterways which are used by recreational boaters.

In the past 10 years, the department has worked to create a database of economic information on the recreational fisheries. The federal government, in cooperation with the provinces, has conducted two surveys of sport fishing in Canada, in 1975 and 1980. A third is in the planning stages for 1985. The department has sponsored seven Canadian sport fisheries conferences since 1970, and another is planned for the fall of 1985.

As a further recognition of the importance of the recreational fisheries and the need to address the concerns of the sport fishing community, the department has recently created a new Recreational Fisheries Division in Policy and Program Planning (Corporate HQ). This division is responsible for improving policy coordination and providing a focus for the development of federal/provincial coordination mechanisms.

## BENEFICIARIES

The direct beneficiaries of these programs are anglers and the recreational fishing industry across the country.

Angler effort by geographic region is distributed as follows:

| | |
|---|---|
| Ontario | 46% |
| Quebec | 19% |
| British Columbia | 13% |
| Alberta | 6% |
| Saskatchewan | 4% |
| Atlantic Provinces (incl. Newfoundland) | 7% |
| Territories | 1% |

## EXPENDITURES

Program resources for departmental initiatives directed toward the recreational fisheries are included as part of existing program areas; i.e., biological research, small craft harbours, hydrographic charting, economic analysis, surveillance and enforcement, etc.

## OBSERVATIONS

The study team focused its attention on species and geographic areas where the sport fishing activity is viewed as a direct competitor with the commercial industry, i.e., salmon in British Columbia and Atlantic Canada, and freshwater species in the Great Lakes.

The area of conflict is the greatest in British Columbia. The sport fishery sees a direct conflict in the utilization of hook and line species (chinook and coho) with hook and line commercial gear (trollers). In addition, they see the incidental catch of hook and line species in seine gear as damaging to the stocks.

The commercial fishery seems to have few problems with purely recreational small boat fishermen. However, they see the rapidly expanding commercial recreational industry comprised of lodges and charter vessels, as a user of large volumes of fish, with few restrictions, and able to fish 12 months of the year.

The size of all fleet segments in B.C., including commercial and recreational, places demands and costs on DFO for salmon enhancement, management, and enforcement. As joint users of the resource, all should pay for the benefits from the common property resource.

Over time, the strictly commercial hook and line fishery will decline as more of the species of interest are allocated to the sport fishery. It should also be noted that more end markets (salmon smokers in Europe) are being supplied with aquaculture production, thereby reducing markets for hook and line commercial species.

The salmon enhancement program in Phase I was disproportionately oriented to hook and line species (60%) due to major hatchery construction. While these hatcheries may continue to help rebuild these species in the transition or the SEP II phase, the SEP program should not be unduly weighted to the recreational fishery.

Enforcement, market studies and kreel surveys seem to be considered adequate and effective in sport fishery.

In Atlantic Canada, while many species are fished for recreation, the most controversial species is salmon. The Atlantic salmon stocks are now seriously depleted and there is general agreement that the commercial fishery for this species should be ended for conservation reasons, and to maximize the economic benefits from this resource.

In the fresh water fishery, the Ontario government, in conjunction with DFO, has instituted boat quotas by species. Ontario has a stated policy of buying back licences and quotas on a voluntary basis. Once purchased, this portion of the total allowable catch is then available to the sport fishery. This program is eminently fair and allows an orderly reduction of the commercial fleet.

## ASSESSMENT

The economic benefits of the sport fishery are being recognized by the department and it is reorganizing to better understand and manage this fishery. The fishery was actively pursued by 5.9 million anglers in 1980 of which 1.1 million were either out of their home province, or from another country. Direct expenditures by anglers were in excess of $1.7 billion that year. The key species of interest to the study team are the hook and line salmon species in B.C., most freshwater species in the Great Lakes and salmon in the Atlantic Provinces. Given the scarce nature of these resources, the conflict between the commercial and recreational fishery will escalate over time.

## OPTIONS

The study team recommends to the Task Force that the government consider:

In British Columbia:

a. Continuing to recognize that the recreational fishery is a viable but not unlimited end user of the resource. It should be allocated a stated amount of the resource. If mutually agreed management procedures (closures, limits) do not effectively provide enough fish for a full-year fishery, the sport fishery should not be allowed to damage DFO's overall management plan.

b. Imposing higher fees for recreational fishing licences. The current $5 one time or $20 yearly charge is well below other equivalent recreational costs or the value of the fish caught.

c. Charging a special fee for commercial operators of recreational fishing vessels. Since the common property resource is the basis of this business, such a fee should relate to that of a regular commercial licence.

d. Allocating over time a greater percentage of the hook and line salmonid species to the recreational fishery in areas of high concentration. This policy should be clearly established with a timetable to allow rational investment decisions by the troller fishery.

e. Maintaining current levels of enforcement, market studies and kreel surveys.

In Atlantic Canada:

a. Ending the commercial fishery for Atlantic salmon where practical by instituting a one-time compulsory buy back of all commercial salmon licences.

b. Continuing to monitor and protect the Atlantic salmon habitat.

c. Encouraging international protection of the species.

d. Reducing person-years and dollars allocated to Atlantic salmon within various departmental budgets.

e. Depending on wild reproduction and not make enhancement an integral strategy for the species.

In Ontario:

a. Continuing habitat protection including lamprey eel control, and membership in international commissions.

## THE AQUACULTURE PROGRAM

### OBJECTIVES

To provide scientific advice for the regulation of aquaculture.

To develop aquaculture growing and harvesting techniques so as to assist the relatively new industry.

To coordinate the science and technology policies and programs of the Government of Canada as they relate to aquaculture.

### AUTHORITY

Fisheries Act, Fisheries Development Act, Fisheries Subsidiary Agreements of the Economic and Regional Development Agreements (ERDAs).

### DESCRIPTION

Aquaculture is the cultivation or farming of fish, shellfish or marine plants, in contrast to the traditional harvesting of these products "in the wild".

Aquaculture activities and expenditures are not centralized within a single program or organizational structure in the Department of Fisheries and Oceans (DFO). The various components are as follows:

a. Aquaculture Scientific Research Program

   This is a sub-component of DFO's Research Program and includes genetics, diseases, growth and nutrition, as well as aquatic ecosystems.

b. Aquaculture Development Program

   This is funded from two sources, the ongoing DFO Fisheries Development Program and Fisheries Subsidiary Agreements signed with several provinces. Activities under this program include the development of growing and harvesting technology, building or expanding hatchery production, and the provision of financial grants to aquaculture operations.

c. Aquaculture Industrial Research Program

This program provides financial assistance. Funds are voted to the National Research Council for the Program for Industry/Laboratory Projects (PILP). Aquaculture related PILP projects are managed by the DFO.

d. Regulation

Inter-and intra-provincial movements of live fish and shellfish are regulated to prevent the spread of disease.

e. Seedstock

A major support of salmon aquaculture to date has been the sale of smelts from federal hatcheries.

f. Coordination and Extension Services

Designated staff respond to enquiries, administer Fish Farm Permits and provide liaison with other agencies.

## BENEFICIARIES

Direct beneficiaries are the private sector aquaculture enterprises, which include approximately 1,000 operations, plus about 3,000 trout pond operators, and those considering the establishment of new such enterprises.

Scientific and technical advances are also applicable to the restoration and enhancement of wild stocks, and thereby benefit the fishing industry as a whole.

**EXPENDITURES (millions of current dollars) 1**

| | 83/84 | 84/85 | 85/86 |
|---|---|---|---|
| 1. Aquaculture Scientific Research | | | |
| Salaries and Wages | 1,573 | 1,682 | |
| Other O&M | 680 | 690 | |
| Grants and Contributions | 61 | 71 | |
| Capital | 57 | 62 | |
| **Sub-Total** | 2,371 | 2,505 | |
| 2. Aquaculture Development | | | |
| Fisheries Development Program | 205 | 333 | 312 |
| Subsidiary Agreement (ERDAs) | - | 210 | 1,198 |
| **Sub-Total** | 205 | 543 | 1,510 |
| **TOTAL** | 2,576 | 3,048 | N/A |
| Person-Years (Research only) | 39.2 | 46.1 | - |

[1] Excludes $747,000 in 1983-84 and $652,000 in 1984-85 funded by NRC and PILP. Expenditures are approximations since many activities are applicable to both protection of wild stocks and aquaculture.

**OBSERVATIONS**

The aquaculture industry in Canada is still in the developmental stage. However, interest and private investment has been growing rapidly in recent years. To date, most of the focus has been on species such as salmon, trout, oysters, mussels, lobster and Irish moss.

The rapid growth of aquaculture in other countries demonstrates its potential. In Norway, for example, salmon farming has grown from practically nothing to an export business worth in excess of $100 million per year, within a decade. This Norwegian cultivated salmon is now successfully competing with Canadian salmon in our export markets, and is even beginning to be sold here. As well, Norway is examining the cultivation of other species such as cod and halibut, even though it has a major fishing industry based on such species.

Since practically all fish stocks "in the wild" are being fully utilized in Canada, aquaculture is one of the few areas of the fisheries offering the potential for increased production. It is also attractive for investors since it allows the consistent delivery of high valued seafood products based on market demand rather than availability in the wild. In fact, in the long term, it may be necessary for Canada to have an aquaculture industry to stay competitive in export and domestic markets for some seafood products.

Fisheries resources which are being cultivated are private property and are thereby within provincial jurisdiction, in contrast to the common property fishery, which is exclusively under federal jurisdiction. Present legal opinion appears to support the primacy of the provinces in inshore marine waters. This is assumed, for example, in the "Aquaculture Act" of Nova Scotia, under which the province issues aquaculture leases.

Nevertheless, federal and provincial roles cannot be simply separated. The Government of Canada still has jurisdiction over many aspects relating to aquaculture, including for example, DFO's regulation of fisheries habitat and fish disease control, and MOT's regulation of water leases for the control of navigation. In addition, basic research support to the industry may be provided more efficiently on a national basis, as is done by DFO.

As a result of this overlapping or intermeshing of jurisdictions and responsibilities, someone wishing to establish an aquaculture operation may in certain cases require in the order of 15 separate permits from various federal and provincial departments.

Many in the traditional fisheries are fearful of, and oppose any shift in DFO resources and priorities from that fishery to aquaculture. Most new enterpreneurs in aquaculture are not fishermen since different skills and attitudes are needed. It is more akin to agriculture.

## ASSESSMENT

No special federal financial assistance or subsidies should be directed specifically toward the aquaculture sector or the same economic chaos may be created as was done in the traditional fishery. There have been many instances in the past where promising fisheries opportunities, such as Atlantic herring, ended in serious trouble because of easy government financing. In addition, as in most other rapidly developing sectors, there will come a time when a major "shake-out" of the industry will occur. Some or many aquaculture firms will inevitably fail, and a fewer number of stronger enterprises will survive. Government should not interfere with this competitive process, as they have in the traditional industry.

Aquaculture should therefore be treated as any other business. As such, aquaculture enterprises should be eligible for financial assistance under existing programs such as DRIE's Industrial and Regional Development Program, NRC's Industrial Research Assistance Program, FBDB's loan programs, and others.

The numerous and overlapping jurisdiction of various federal and provincial departments relating to aquaculture certainly leads to duplication of effort, excessive bureaucracy, and hampers the development. On the other hand, simply deregulating aquaculture would be irresponsible due to the need to protect natural stocks, environmental consideration, the need to maintain navigation rights, and so on.

To reflect provincial primacy in aquaculture, a possible resolution would be the establishment of a provincially administered leasing system, closely coordinated and linked to the various federal permit systems. Such a system could then provide a single application and common approval process to the aquaculture industry.

DFO should continue biological research and provide technical advice to the aquaculture industry in the areas of genetics, nutrition, disease and the like. This technical knowledge is applicable to the protection of the wild resource, and is more effectively undertaken at a national level. The aquaculture industry should have some input into the priority setting and selection of such research programs.

The development of aquaculture must not be used as an alternative to protecting and enhancing the wild stocks. In the B.C. salmon fishery for example, protection of the fish habitat should not be weakened under the excuse that salmon aquaculture will provide an alternative source of raw material. As well, the provision of seed stock and juvenile fish to aquaculture operations from federal hatcheries should stop as soon as private hatcheries are constructed to provide this service. The development of private hatcheries must therefore be a priority, since the primary use of federal hatcheries must be to enhance stocks "in the wild".

## OPTIONS

The study team recommends to the Task Force that the government consider aquaculture as any other business and as such, it should be eligible for general business programs.

In addition, the government consider negotiating and signing memoranda of understanding with each provincial Minister of Fisheries with a view to:

a. Defining the areas of responsibility of each level of government relating to aquaculture.

b. Delegating as much of the management of the aquaculture to provinces as is practical, subject to the continuing need of the federal government to regulate fish habitat and disease, and navigation, and the need for this industry to have access to federal scientific expertise.

c. Simplifying the regulatory burden on the industry, specifically as it affects new entrants.

## OBSERVE, RECORD AND REPORT (ORR)

### OBJECTIVE

To encourage the public to become more involved in the protection of the resource, and to assist the government with its efforts in enforcement.

### AUTHORITY

Fisheries Act.

### DESCRIPTION

Established in June 1979, the Observe, Record and Report Program (ORR) was jointly sponsored by the B.C. Wildlife Federation, the Department of Fisheries and Oceans (DFO) and the provincial Fish and Wildlife Branch.

The program is similar to programs operating in Alberta and the State of Washington where callers can use a Zenith or toll free number to report violations of fisheries or wildlife regulations.

Initially lines were open 24 hours a day, seven days a week, 12 months a year. Since 1980, DFO has been solely responsible for the program; lines are now open 24 hours a day during the commercial season (usually June 15-September 30 and February 15-March 31). During the remainder of the year lines are available 16 hours a day, seven days a week.

During the off-hours calls are received by the regular on-duty operator in DFO's radio room. Calls received during the regular working day are handled by employees of DFO's Enforcement Branch.

Calls are taken and messages are referred to provincial authorities if the call refers to a provincial responsibility. If it is a fisheries infraction being reported, DFO fishing officers are contacted in the area concerned.

## BENEFICIARIES

The general fishing public of B.C. including commercial, sport and Natives.

## EXPENDITURES

No PYs or expenditures are specifically allocated to ORR. The Zenith number cost $163.60 per month but is used for other DFO business and so cannot be considered solely an ORR expenditure.

## OBSERVATIONS

In 1984 during the off-hours (after 5 p.m. and on weekends) 540 calls were received. Of these, 325 were fishery-related problems. These figures do not include calls handled by DFO employees during the regular working hours.

It has been difficult to assess whether or not the program has acted as a deterrent to violations, and statistics are not readily available on how many prosecutions have resulted from telephone tips. The ORR has, however, made an effort to involve the public more directly with the problem of enforcement. Fisheries officers also support the program as it is easier to investigate a specific tip rather than patrol at random looking for violations.

## ASSESSMENT

The Observe, Record and Report Program which costs some portion of $163 per month, provides general public awareness of, and involvement in enforcement of fisheries regulations.

## OPTIONS

The study team recommends to the Task Force that the government consider maintaining the program.

## FISHING TIMES AND AREAS B.C.

### OBJECTIVE

To provide opening and closure information on the Pacific Coast Salmon Fishery on a 24-hour, 7-day a week basis for commercial fishermen and the sport fishery.

### AUTHORITY

Fisheries Act.

### DESCRIPTION

The program was initiated to improve the availability of information on fishing times to commercial fishermen, and to reduce the number of calls related to fishing times received at the Department of Fisheries and Oceans (DFO) operations centre.

An automatic telephone answering machine (Record O'phone) plays a pre-recorded fisheries message usually related to commercial openings and closures. At present 10 lines are operating. The public is advised of this service by publication of the number in the commercial fishing guide produced by DFO. The number is also printed in local phone books.

PYs are calculated on the estimate that 1 hour each day is required to check and record the up-to-date messages, no capital is involved as the recording machine has been purchased by DFO.

### BENEFICIARIES

Commercial fishermen, fishing industry and the general public.

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Salaries<br>Other O&M<br>Capital<br>Grants/ Contributions | 7.8 | 7.8 | 8.0 | 8.3 | 8.4 |
| **TOTAL** | 7.8 | 7.8 | 8.0 | 8.3 | 8.4 |

## OBSERVATIONS

The B.C. program is managed on a daily basis during the salmon runs. Decisions are required on a small area basis to assure that sufficient spawners reach the grounds. This leads to spot openings and closures of the fishery.

Without such a program, fishermen would have to reach local officers or headquarter staff to obtain sufficient information to plan their fishing activities. This would require more time and therefore costs, than the program in question.

The sport fishery has instituted a program of spot closures for certain days and areas to reduce the catch of chinook and coho salmon.

## ASSESSMENT

The 24-hour open line to supply open and closure times costs $8,000 and a fraction of a PY. It saves innumerable hours of management time answering the same enquiries.

## OPTIONS

The study team recommends to the Task Force that the government consider maintaining the program.

## FISHERIES STATISTICS PROGRAM

### OBJECTIVE

To collect, compile and publish fisheries statistics in response to the needs of the Department of Fisheries and Oceans (DFO), other government departments, the fishing industry and others.

### AUTHORITY

The Fisheries Act.

### DESCRIPTION

Fisheries statistics is not a distinct program within the DFO, since many parts of the organization are involved in this activity.

The basic data input to the ongoing DFO statistical system are fish landings and landed values. Most of this data is derived from "sales slips" which must be used by buyers when purchasing fish from fishermen, or vessel log books. Statistics on fisheries exports and imports are obtained from Statistics Canada.

As well, the statistics units in DFO carry out periodic surveys. These include kreel surveys of salmon recreational fishermen and surveys to collect economic data on fishing and processing enterprises.

### BENEFICIARIES

Accurate data on fish landings are essential for the department to manage the fisheries. The resulting conservation of the resource directly benefits the total fishing industry.

Publications relating to fisheries statistics are of use to the DFO, other departments and governments, the fishing industry, other businesses, universities, the media, etc.

## EXPENDITURES

The collection and compilation of fisheries statistics is a major expenditure item. However, since it is performed by many parts of the department, DFO is unable to provide estimates. For example, many fisheries officers in the field spend a portion of their time collecting statistical data, but this expenditure is not recorded. There are identifiable statistics units in the Regions, and they provide EDP services for all programs. Finally, expenditures on statistics are included as part of the Fisheries Management Program components, so including them here would lead to "double counting".

The H.Q. statistics unit consists of 10 PYs, of which 5 PYs are devoted to the publication of various annual and periodical reports. The other 5 PYs are involved in surveys. The 1985-86 budget is:

| | |
|---|---|
| Salaries | $300,000 |
| O&M | 530,000 |

The O&M expenditures relate primarily to publications and surveys.

## OBSERVATIONS

The department has acknowledged that increasing demand for more detailed, accurate and timely information has put great pressure on the current system, which appears inadequate. As a result, major systems improvement projects have been initiated on both the Atlantic and Pacific coasts.

The consensus of the industry is that the existing system needs a major overhaul to improve the timeliness and accuracy of statistics. Accurate statistics are the basis of any national management system, and there is widespread mistrust of present statistics within the industry. There are some fisheries (e.g. Bay of Fundy herring) where the statistical system has been grossly inaccurate.

At present, the statistical system is limited primarily to data on fish landings and landed value. The department now wants to expand this to include commercial and economic data relating to fishing and processing enterprises. Such additional data is deemed necessary for continued government intervention in the industry.

All the fisheries statistical publications are provided free of charge by DFO.

Industry consensus is that the system could be improved primarily through the introduction of new technology and not by adding more statistical staff.

## ASSESSMENT

Accurate and timely data on fish catches is essential for effective fisheries management; the department's primary mandate. The present statistical system seems inadequate to meet the needs of both the department and the industry.

The DFO should begin charging recipients of its statistical publications, not only to be consistent with the goal of cost recovery and the practices of other departments but also as a measure of whether or not these publications are of use to recipients.

Since the concept of direct government intervention in the socio-economic and business aspects of the fishing industry is not supported by the study team, the expansion of the statistical data base into such areas should be resisted.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Continuing current initiatives to improve the statistical system relating to fish catches and landings. Such improvements should be achieved by utilizing modern technology and should result in a reduction of person-years allocated to this activity.

b. Maintaining the current statistical system to provide more socio-economic and financial data relating to fishing and fish processing enterprises.

c. Charging recipients for statistical publications, and improve the timeliness of such publications.

# SCIENTIFIC INFORMATION AND PUBLICATIONS (SIP)

## OBJECTIVE

To manage the dissemination of research and development information relevant to Department of Fisheries and Oceans (DFO) programs.

## AUTHORITY

Department of Fisheries and Oceans Act 1979.

## DESCRIPTION

Scientific Information and Publications (SIP) provides the delivery mechanism for DFO research results as well as outside research information related to fisheries and aquatic matters. The publication of data from the Canadian Hydrographic Services is required by statute. Services provided to Ocean Sciences and Surveys require 45% of the effort and Fisheries Management 55%.

SIP is administered from Ottawa with program responsibilities set in response to advice from an internal Advisory Board representing each regional Director General (DG) and an external Editorial Board. Publications are marketed through Supply and Services and more than 75% of O&M is contracted to the private sector for typesetting, printing, database building and software development.

More than 500 complex scientific manuscripts are evaluated each year, of which about 300 are edited, published and indexed for approximately 10,000 printed pages. A major output of SIP is the monthly publication of The Canadian Journal of Fisheries and Aquatic Sciences. About 40% of articles in the Journal are from DFO scientists/researchers with the balance from other Canadian and international sources. Approximately 2,500 referees from around the world provide advice free of charge on the acceptance or rejection of manuscripts for publication. Approximately 7,000 information requests are actioned each year.

Subscriptions fees are charged for the Journal as well as page charges for non-DFO contributors. Other publications are sold at prices set to recover costs.

**BENEFICIARIES**

Canadian and international fisheries and aquatic scientists, public and private sectors working on aquatic environments, decision makers on resource management and research planning.

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 21 | 21 | 21 | 21 | 21 |
| Salaries | 679 | 700 | 728 | 750 | 780 |
| Other O&M | 703 | 754 | 730 | 730 | 730 |
| Capital | 109 | 20 | 20 | 20 | 20 |
| Grants/ Contributions | - | - | - | - | - |
| **TOTAL** | 1,491 | 1,474 | 1,478 | 1,500 | 1,530 |

Income generated by SIP was approximately $500,000 in 84/85.

**OBSERVATIONS**

Numerous audits and evaluations have shown SIP management and productivity to be comparable to or more effective than equivalent private sector operations. DFO's scientific publications have a worldwide reputation for quality. Its monthly research periodical is rated by independent sources as one of the best in the world.

A major project is under way to automate most of SIP functions over a five-year period, including the introduction of information storage and retrieval and computer-based message system capabilities. This will reduce manuscript turnaround time, increase electronic delivery of information and increase output.

A reasonable measure of the need for information is willingness to pay. SIP publications outsell those of other major science departments. However, gross sales in 83/84 amounted to about $479,000 while expenditures for the branch were $1.5 million. Users pay to search SIP data bases and use is increasing exponentially.

## ASSESSMENT

SIP produces useful and well-respected publications. The Canadian Journal of Fisheries and Aquatic Sciences is recognized internationally as a high quality publication.

DFO is unique in that it is the only federal department, except National Research Council, (NRC) that publishes its own research publications. Federal researchers in other government departments such as the Canadian Forestry Service are required to submit their reports and papers to private sector journals and periodicals for publication. The alternative of having NRC publish the fisheries and aquatic material was examined by the department several years ago and it was found that the editorial policy of NCR was not compatible with the established style of DFO's material. In addition, given the existing international reputation of the publications, the positive image it gives DFO and the special service it provides for DFO scientists, no benefits would result from transferring these activities to NRC.

Subscription fees for the Journal and the price of other publications have been increased in recent years. In 1985, subscription fees were increased to $69.30 in Canada and $83.15 outside Canada. Effective January 1, 1986 subscription fees for Canadians will be set at $150 for institutions and $50 for individuals; for non-Canadians, $180 for institutions and $80 for individuals. As institutions represent approximately 70% of subscribers, increased revenues of $40,000 are projected. The lowering of individual subscription fees is expected to increase sales and recover subscribers lost when fees were increased previously. Prices charged for other publications have also been increased by as much as 33%. Vessels are required by law to carry certain publications such as hydrographic data and therefore it is difficult to increase the price for these publications.

Despite the increase in fees, revenues are still not projected to equal expenditures. A concerted effort at full cost recovery through increased revenues and reduced costs should be pursued. In addition to increased selling prices, increased page charges for the publication of non-DFO material and increased user fees should also be considered.

The automation process currently under way is expected to result in increased efficiencies. Reductions in staff are not projected as estimated workload volumes are expected to increase. The phase-in period for the automation of operations, currently set at five years, should be reduced. While 75% of production work is contracted to the private sector, increased use of outside facilities should be pursued, again to reduce costs.

## OPTIONS

The study team recommends to the Task Force that the government consider carrying out the operations of SPI on a full cost recovery basis by April 1, 1988. This can be achieved through increased revenues and reduced costs. Initiatives to attain full cost recovery should include increased selling prices for publications, increased page charges for non-DFO material and increased user fees. Initiatives to reduce costs should include increased use of contracting out and quicker implementation of automation, both of which should provide the potential for staff reductions.

## NEWFOUNDLAND RESTRUCTURING AGREEMENT

### OBJECTIVE

To prevent the collapse of the Newfoundland fishing industry and to lay the basis, through the restructuring of certain fishery enterprises, of a Newfoundland fishing industry which in the long run is commercially viable, internationally competitive, and essentially privately-owned.

### AUTHORITY

Atlantic Fisheries Restructuring Act.

### DESCRIPTION

In 1981-82, the Atlantic fish industry experienced a severe crisis. The major processing and trawler-owning companies which collectively accounted for 40% of the value of Atlantic fish production were on the verge of bankruptcy. This threatened the collapse of the Atlantic fishing industry and the communities and service industries dependent upon it.

In September 1983, the Government of Canada and the Government of Newfoundland concluded an agreement concerning the restructing of the Newfoundland fishery and shareholdings in the restructured company - Fishery Products International (FPI). FPI was formed from the assets of seven companies as well as the scallop operations of an eighth company. Under the terms of the agreement, a total of $150.9 million in equity investment was made by the federal government ($75.3 million), the Government of Newfoundland ($31.5 million) and the Bank of Nova Scotia ($44.1 million). Newfoundland and the Bank of Nova Scotia converted outstanding debt in these amounts to equity. In January 1985, a further $25 million was required - $15.5 million from the federal government, $9.5 million from Newfoundland. As a result, the federal government owns 62% of FPI with a total of $90.8 million in preferred shares.

In addition to the Newfoundland restructuring, the federal government also purchased 20% of the shares of National Sea Products (NSP) - a restructured company in Nova Scotia, and 100% of the shares of Pecheries Cartier, a Quebec processor. In total, $153 million has been provided by the federal government for the restructured companies. In addition, $100 million in loan guarantees have been authorized.

**BENEFICIARIES**

Plant workers, fishermen and local suppliers of restructured companies. Small communities dependent on plants operated by restructured companies.

**EXPENDITURES ($ millions)**

| | **83/84** | **84/85** | **85/86** | **Total to Date** |
|---|---|---|---|---|
| FPI | - | 90.8 | 15.5 | 106.3 |
| Total Atlantic Restructuring | 38.5 | 98.8 | 15.5 | 152.8 |

**OBSERVATIONS**

The restructuring of the Atlantic fisheries and particularly the Newfoundland Restructuring Agreement provides an example of extensive federal and provincial intervention in the fishery. The federal act authorizing the federal initiatives and the Canada-Newfoundland Agreement specify that both economic and social considerations are to be considered in the operation of FPI. While the company is intended to operate like a private sector company, the governments, as shareholders, retain the right to keep non-economic fish plants open and a clause in the agreement also restricts technological advancement by prohibiting factory freezer trawlers from operating in the Newfoundland fisheries.

In 1984 the three restructured companies incurred substantial losses. FPI losses amounted to $35 million and losses of this magnitude are projected for 1985. A major contributor to these losses is that all previous plants continue to operate even though numerous studies have identified overcapacity as a major problem in the fishery. On the other hand, NSP announced a $7 million profit for the first half of 1985.

During the consultation process, considerable concern was expressed over the existence of a government-owned company in the Atlantic fishery. Complaints of poor management practices, excessively low selling prices and unfair competition were common. It was argued that the presence in the industry of a government-controlled company with ready access to unlimited government funding stifled private sector initiative and investment. There was almost unanimous support for the government to return FPI to a private-sector operation. While the preference was clearly for Canadian ownership, foreign ownership was considered preferable to government ownership.

FPI is in the process of preparing a management plan which is designed to put the company on the road to economic recovery. It is expected that another infusion of federal funds will be requested ($60-100 million) to put the new company on a viable footing.

## ASSESSMENT

The intervention of government in FPI & Pecheries Cartier has not resulted in improved economic performance. As long as social considerations take precedence over business decisions, the companies cannot be expected to operate on a profitable basis. As an alternative, the federal government should dispose of its interests in National Sea Products and return FPI and Pecheries Cartier to the private sector as soon as possible. This is consistent with a major thrust of the study team's recommendations to reduce federal intervention in the fisheries and allow the industry to function on an economic basis and subject to market forces.

Specifically in relation to FPI, the company should be allowed to operate with economic/business considerations as paramount. A major problem in the fishery is over-capacity. FPI could reduce operating losses by selling some plants to the private sector - which probably would be able to operate them on a profitable basis as independent companies once the plants were freed from large FPI overhead costs. This would continue to provide needed jobs for some communities. However, for some plants, permanent closure may be the only economic solution. The social adjustment required by these communities would be difficult but if the fishing industry is to be a net contributor to the economy, such adjustments will be required.

Technological change should be allowed in the Newfoundland fishery - specifically the use of factory-freezer trawlers - so that companies can harvest the resource by the most economic means.

It is clear that when FPI comes forward with its management plan some additional assistance will be required. However, assistance should be confined only to debt relief/forgiveness. Federal funds should not be provided for vessel purchases or modifications, plant modernizations or marketing activities-initiatives which would further affect the ability of private sector companies to compete with FPI. The reduction of FPI's debt load would remove an operating impediment and could make the company more attractive for a potential buyer.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Disposing of its interest in the restructured companies as soon as possible and thereby returning the operation of FPI and Pecheries Cartier to the private sector. In the interim, FPI should be allowed to operate without government interference with economic/business considerations paramount.

b. Confining additional federal assistance to FPI to debt relief/forgiveness. Government funding should not be provided to FPI to improve its competitive position in the industry at the expense of private sector companies.

# FORESTRY OVERVIEW

## The Industry

Forestry plays a major role in the economy of every region of Canada, yet its real importance and contribution to GNP, employment, foreign exchange earnings, and tax revenue, is not fully appreciated. Few Canadians comprehend that forestry has consistently ranked as our most important economic sector.

In 1983, the total value of shipments of forest products was close to $24 billion. Including logging forestry was a $30 billion business. This industry accounted for 14.7% of all manufactured goods in Canada (30% in New Brunswick and 50% in British Columbia).

Forestry is one of Canada's largest employers. In 1981, some 292,000 Canadians were employed directly in the forest industry. Employment dropped during the recession to 260,000 in 1983, although forest sector employment has remained constant at about 15% of all manufacturing employment. Surveys have shown that each direct job in the forest sector results in two indirect jobs elsewhere in the economy. In 1983, some 780,000 Canadians were therefore dependent, directly or indirectly, on the forest sector for employment. In addition, it is estimated that some 300 communities derive their sole livelihood from the forest sector.

The Canadian forest industry ranks first in the world in terms of the value of exports and newsprint production, second in pulp production and third in softwood lumber output. Forestry exports totalled $13.4 billion in 1983. Main customers were the United States (72%), Japan (6%), and the United Kingdom (5%). Imports were about $1.5 billion, resulting in a net positive trade balance of $11.8 billion. Forestry is the largest contributor to Canada's positive trade balance and a crucial source of foreign exchange earnings.

The forests are also of fundamental importance to Canada's multi-billion dollar tourism and outdoor recreation industry, and play an essential role in the environment, such as regulating water flow.

The forest industry developed in a relatively carefree environment. The view prevailed that the forest was inexhaustible and in some areas was simply highgraded, with little, if any, effort devoted to the management and renewal of this resource. As well, the world economy was growing rapidly so that practically any forest product which was produced could be sold at a profit.

In the latter 1970s, optimism about future markets was reinforced by favourable economic projections for forest products such as those in the Forest Sector Strategy for Canada (1981), which indicated that projected growth in world consumption from 1980 to 2000 would increase by 25% for lumber and 75% for pulp and paperboard. That optimism, combined with plant modernization, other efficiencies, and the development of forest resources throughout the world, have resulted in overcapacity in the forest products industry.

More recently, the tide changed and the industry is now in crisis. The crisis has two aspects. The first is the decreasing profitability of the industry as a result of insufficient demand, soft prices for forest products and increasing costs. The second is the projected shortages of wood supplies for the future. Regional shortages of wood at competitive costs have already emerged in every province, and the limits are in sight for premium softwood sawlogs. Pulpwood shortages are also emerging across Canada while higher quality hardwoods have been largely depleted.

International markets for our forestry products, which comprise 70% of sales, are also becoming more competitive and restrictive. Lower rates of economic growth, currency values and various protectionist measures, such as the present U.S. countervail threat to reduce Canadian lumber's 30% share of their market, essentially regulate Canada's forest products trade and its profitability. This vulnerability is increased due to Canada's dependence on a few major commodities sold on few markets. Many of our traditional customers as well are becoming self-sufficient and net exporters in forest products, including developing nations which combine modern technology with low costs of raw materials and labour.

The industry is undergoing a transition from harvesting original natural forests to new forests. The proportion of new forests must increase in the future and gradually displace the natural forests. Much valuable growing time has already been lost by not replenishing the depletion of the natural forests fast enough. It is imperative that no more time be wasted in the forest renewal program, or the projected shortage of new forests for future needs will be even more devastating for the industry and the Canadian economy.

The forest industry's ability to generate wealth for Canadians is based on a continuous supply of wood and increasing competitiveness in international markets. The forest sector offers a potential for more growth, increased wealth, foreign exchange, employment, tax revenues and regional economic activity, but only if the issues that have emerged after decades of carefree development are dealt with decisively now. The seriousness of the present crisis cannot be overestimated and requires a concerted national effort to protect and assure continuing viability of this most important sector in Canada.

## The Role of Government

The federal government has the basic responsibility for federally-owned lands while the provinces are responsible for provincial Crown lands. This stems from their ownership and respective legislative jurisdiction. Apart from that, both levels of government have identifiable roles, interests and concerns with respect to the forest resources as a whole.

The Forestry Development and Research Act (1966-67, C.25, S.26) identifies the federal government's primary responsibilities in forestry to be research; the promotion, protection and wise use of forest resources; assistance to the provinces for forestry activities; the protection and management of federal Crown lands; and the conduct of economic studies. Although there is a Minister of State for Forestry, this Act is now administered by the Minister of Agriculture and is implemented primarily through the Canadian Forestry Service (CFS).

Federal jurisdiction in relation to forestry also includes its constitutional responsibilities with respect to trade and commerce, employment, statistics and taxation.

During the past decades, forestry had a relatively low profile within the federal government, despite its importance to the Canadian economy. This is reflected by the fact that the person-years available to the principal research agency, the CFS, have decreased by more than 50%.

As well, the federal government has not managed the forests on its Crown lands. Such lands include Indian lands, Department of National Defence (DND) lands, national parks and those in the Northwest Territories and Yukon, and represent 27% of the inventoried forest land base.

Most of the provincial Crown lands were also not subject to proper forest management practices. Forestry companies operating on such lands did not undertake forest management or reforestation because of a lack of long-term forest land tenure, and because provinces did not consider forest renewal a priority.

Several years ago, however, both levels of government and the industry recognized the impending crisis in forestry. As a result, a national consensus was reached on what had to be done and this was defined in the "Forest Sector Strategy for Canada (1981)". This strategy included the following four components:

a. wood supply strategy
b. market strategy
c. research and development needs
d. human resource needs.

Following this discussion paper, the federal government in 1982 issued the policy statement "A Framework for Forest Renewal". This addressed the wood supply component of the forest strategy by:

a. indicating the magnitude of costs involved in forest renewal and how these might be shared among senior governments and industry; and

b. defining guidelines for a new generation of federal-provincial forestry agreements proposed as the principal mechanism for the delivery of forest renewal programs.

In 1982, the CFS was delegated the responsibility for negotiating and managing forestry subsidiary agreements under the General Development Agreements. CFS signed such an Agreement with Nova Scotia in 1982. In 1984, forestry agreements under the ERDAs were signed with Prince Edward Island, Nova Scotia (additional to the 1982 agreement), New Brunswick, Manitoba, Saskatchewan, Alberta and Ontario. In 1985, Agreements were signed with British Columbia and Quebec. These new Agreements embody the principles enunciated in the Framework for Forest Renewal. The Agreements now in place (exclusive of Newfoundland) total more than one billion dollars of which $510 million constitutes the federal contribution.

Besides its role in administering federal/provincial agreements, the major and traditional role of CFS has been in forestry research, particularly in the areas of silviculture and forest protection, management and utilization. The total 1984/85 operational budget of CFS amounts to 1,230 PYs and $188 million. Approximately 1,000 PYs of this total are directly involved in research activities which are conducted primarily at six forest research centres and two institutes.

CFS also contributes a significant share of the funding for industry operated research centres, including FORINTEK (forest products research), and FERIC (harvesting research). The department is also attempting to strengthen its economic planning and marketing services role at present. As well, the department is becoming increasingly involved in various employment programs related to forest renewal.

## A Direction for the Forestry Industry and Government

In the view of the study team, the federal government must continue to acknowledge the present and future importance of the forestry sector within national priorities by enhancing the public profile of the CFS, in the allocation of resources to this sector, and by assuming leadership in reforestation programs.

The federal government does not have direct jurisdiction over the management of provincial forest lands. However, the fulfilment of broader federal responsibilities for trade and commerce, employment, and tax policy are important to ensure that forestry's contribution to Canada's foreign exchange earnings, employment levels and tax revenues is not jeopardized.

The forest sector is unique in that government initiatives have been undertaken in accordance with a national strategy. No other natural resource sector has such national goals and consensus.

As mentioned, the Forest Sector Strategy for Canada consisted of four components:

a. wood supply strategy
b. market strategy
c. research and development needs
d. human resources

The first is being addressed through federal/provincial forestry agreements, which appear to be operating satisfactorily toward achieving their stated objectives. It is imperative that forest management and renewal become a continuing and essential part of Canada's forestry. Reforestation must continue beyond the 5-year term of these agreements and even beyond the 20-year provincial plans. Programs and incentives must be developed to achieve such long term objectives. Given the provincial ownership of the resources and the federal responsibility under the Forest Development and Research Act, the Government of Canada must make its continuing support conditional on immediate resolution of the long-term reforestation responsibility.

The forest industry and government should also examine market potential more critically. An appropriate strategy must be developed with industry and the provinces to address the following issues:

a. tariff and non-tariff barriers
b. lack of market diversification geographically
c. need for new product development
d. neglect of the hardwood timber resource
e. difficulties in trading with centrally planned economies
f. quality and product mix
g. export of logs
h. opportunities for secondary industries.

The third component is research and development. R&D results have an important bearing on timber supply and market potential, and therefore on our competitive position in world markets. Neglect of science and technology is just as serious as neglect of regenerating cutover forests. R&D will enable us to be more cost-effective in the use of scarce forest renewal funds. Canadians now spend less than 0.7% of the forest products sales dollar on R&D, compared with 1.5% in the U.S. We also lag behind our competitors in Scandinavia, Japan and New Zealand. Expanded research is a necessary condition to improve competitiveness.

It is the study team's opinion that CFS should take the lead role in coordinating a national strategy and implementation plan for research related to the development of forestry. Such a research strategy should:

a. be based on marketing strategies which reflect future world market demands for various forestry products, and which best exploit Canada's production advantages and capabilities;

b. address specific constraints on development such as forest production (i.e. reforestation and intensive stand management) and forest protection (i.e., fire, insects and disease);

c. clarify the long term level of financial support for research required in the forestry, together with the roles and responsibilities of the federal and provincial governments, industry, and universities; and

d. result in better coordination of the national effort to set research priorities and to prevent unnecessary duplication of effort.

The fourth component relates to manpower. A pronounced shortage of research personnel, professional foresters and woods labour was expected. These shortages have not materialized. However, the forest management and renewal programs now offer an excellent opportunity for meaningful job creation programs which will provide long term benefits as opposed to make-work projects. This has been acknowledged through several federal employment programs to date. Nevertheless, such employment programs could be much more beneficial and cost effective if:

a. CFS was given a stronger coordinating and administrative role;

b. more lead time and greater continuity of programs allowed better planning and execution of the projects; and

c. priorities were based more on training and providing longer term employment for forestry workers, rather than simply requalifying any unemployed workers for U.I. benefits.

At present, various government departments, besides CFS, are involved in and devote significant resources to forestry-related programs. These include the Department of Regional Industrial Expansion (DRIE) which deals with the secondary processing and marketing sector. As well, there are significant resources allocated to forestry marketing and trade matters within External Affairs. This results in duplication and overlapping which should be eliminated. Marketing, as opposed to trade issues, should be the responsibility of the Forestry department or agency because product development and other production decisions are directly dependent on market information.

There is also a need to coordinate all government policies to avoid action which inhibits trade. In the view of the study team we should not be fostering programs that assist our foreign competitors to the detriment of Canadian forest industries. Also, we should not be providing specific local assistance grants that give specific producers an unfair advantage over other Canadian producers. In the latter case, there is a strong consensus in the forest industrial sector that government subsidies to any forest industries should be avoided, especially as they raise the issue of countervail.

The study team concluded that the development of a national forest policy and programs can best be coordinated through a single agency such as the CFS, functioning independently under a Minister of Forests. It is conceivable that such an agency could even function independently within another department such as EMR or Agriculture. The main point is that such an agency have its own staff responsible to the Minister of Forests. We have suggested a similar structure for the Minister of Mines. The magnitude of the forestry sector and the complexity of the numerous forest-related issues justify this action. It is not perceived that a large bureaucracy would be required, but rather a small, closely knit, and controlled group that would function as a "one stop shop" for forestry clients to coordinate all national forestry matters and refer specialized topics to the appropriate agencies and departments. In fact, the establishment of such an agency or department with the limited functions of policy development, market information, research, and administration of ERDAs, need not employ more people than presently employed. It could thus serve as a useful example to other departments.

# FEDERAL-PROVINCIAL FOREST RESOURCE DEVELOPMENT AGREEMENTS (ERDAs)

## OBJECTIVES

In concert with the provinces, support provincial forest renewal programs to avert wood shortages and enhance the resource base in order to ensure the permanent viability of Canada's forest sector.

Through leverage, increase spending on forest management at all levels in the forest sector with the objective of increasing intensive forestry management treatments to approximately one million hectares per year in order to sustain a harvest level of 210 million cubic metres by the year 2000.

## AUTHORITY

Canada Forestry Development and Research Act.

## DESCRIPTION

The Forest Sector Strategy for Canada announced in 1981, and the Forest Renewal Policy of 1982, set the frameworks within which federal-provincial forest resource development agreements were to be negotiated. These policy statements stressed that the most important issue facing the forest sector is wood supply and that local shortages of wood at a competitive cost are characteristic of every province. The ability to ensure an expanded, inexpensive wood supply through forest management is critical to the future health of Canada's forest sector.

The strategy called for reforestation efforts increasing from 200,000 hectares per annum to 700,000 hectares per annum, and other silvicultural treatments such as weeding, juvenile spacing and fertilizing increasing from 100,000 hectares annually to 400,000 hectares. These forest management activities, in concert with better forest protection and closer utilization practices, will help to ensure the ability of the Canadian forest sector to sustain a harvest level of 210 million cubic metres by the year 2000.

The federal role in forest renewal is exercised chiefly by means of federal-provincial forest resource development Agreements. These Agreements, subsidiary to the Economic and Regional Development Agreements (ERDAs), provide for shared federal-provincial funding of forest management programs designed to enhance existing forest management expenditure levels by the provinces.

The Agreements also provide a means to improve the productivity of forests on federal lands. In most agreements, funds are available for work on Indian and Department of National Defence (DND) lands.

In 1982, the Canadian Forestry Service (CFS) accepted from DREE the responsibility for negotiating and managing the existing General Development Agreement (GDA) forestry subsidiary agreements with the provinces, as well as the necessary resources to support their administration.

CFS signed its first federal-provincial forest resource development Agreement with Nova Scotia in 1982. Negotiations during 1983 led to the signing of forest renewal Agreements under the ERDAs, in 1984, with Prince Edward Island, Nova Scotia (additional to the 1982 agreement), New Brunswick, Manitoba, Saskatchewan and Alberta. An Agreement with Ontario was also signed in late 1984 and, in 1985, Agreements were signed with British Columbia and Quebec. These new Agreements embody the principles enunciated in the Forest Sector Strategy and the Framework for Forest Renewal. The Agreements now in place (exclusive of Newfoundland) total more than one billion dollars of which $510,000,000 constitute the federal contribution.

A summary of these agreements follows. Further details are provided in Appendix A of this assessment note.

| **Province** | **Agreement Period** | **Expenditures Total** | **($M) Federal Share** |
|---|---|---|---|
| British Columbia | 1985-90 | 300. | 150. |
| Alberta | 1984-89 | 23. | 11. |
| Saskatchewan | 1984-89 | 28. | 14. |
| Manitoba | 1984-89 | 27. | 14. |
| Ontario | 1984-89 | 150. | 75. |
| Quebec | | | |
| a) ERDA | 1985-90 | 300. | 150. |
| b) Gaspe | 1983-88 | 22. | 22. |
| New Brunswick | 1984-89 | 77. | 42. |
| Nova Scotia | | | |
| a) Original | 1982-87 | 53. | 28. |
| b) Renewal | 1984-87 | 16. | 12. |
| P.E.I. | 1983-88 | 15. | 12. |
| Newfoundland | 1981-85 | 61. | 55. |

**BENEFICIARIES**

The forest and related industries.

**EXPENDITURES ($000's)**

| | **83/84** | **84/85** | **85/86** | **86/87** | **87/88** |
|---|---|---|---|---|---|
| PYs | 18 | 48.5 | 135 | 133 | 118 |
| Salaries | 574 | 1,374 | 4,226 | 4,444 | 4,242 |
| Other O&M | 771 | 1,840 | 6,738 | 8,332 | 7,825 |
| Capital | 105 | 2,447 | 3,786 | 1,674 | 416 |
| Grants/Contributions | 18,349 | 38,584 | 85,614 | 90,245 | 104,791 |
| **TOTAL** | 19,801 | 44,246 | 100,365 | 104,696 | 117,275 |

Expenditures - by Province ($000's)

| | **83/84** | **84/85** | **85/86** | **86/87** | **87/88** |
|---|---|---|---|---|---|
| Nfld[1] | 13,002 | 15,612 | 12,399 | 0 | 0 |
| P.E.I. | 1,783 | 2,145 | 2,967 | 3,261 | 3,545 |
| N.S. | 4,323 | 6,134 | 13,869 | 14,873 | 0 |
| N.B. | 0 | 6,068 | 8,320 | 9,268 | 9,902 |
| Quebec[2] | 692 | 3,244 | 31,084 | 31,604 | 38,854 |
| Ontario | 0 | 7,917 | 11,905 | 14,878 | 17,905 |
| Manitoba | 0 | 2,722 | 2,416 | 2,531 | 2,641 |
| Sask. | 0 | 389 | 4,344 | 3,172 | 2,358 |
| Alberta | 0 | 13 | 2,060 | 3,105 | 3,070 |
| B.C | | | | ,000 | 39,000 |
| **TOTAL** | 19,801 | 44,246 | 100,365 | 104,696 | 117,275 |

[1] Old Forestry Subsidiary Agreement.
[2] Includes Gaspe Development Plan.

## OBSERVATIONS

A number of factors had an important impact on the new Agreements:

a. a growing recognition in the country that in order to remain viable, the forest sector needed more effort and resources;

b. a realization that the federal role in forestry had dwindled and that, given an international marketplace, it was necessary for Canada to increase its own efforts;

c. a growing concern on the part of the federal government that contribution agreements be better managed to increase effectiveness and accountability; and

d. the desire that the federal role be more evident to those receiving benefits.

The following principles were the basis for the federal position in negotiating new Agreements:

a. the new Agreements would need to be consistent with the Forest Sector Strategy for Canada and would therefore need to address the overriding problem of forest renewal;

b. provinces would need to have in place long term, (minimum 20-year) forest management plans before negotiating new agreements;

c. agreements would ensure the rapid transmittal of research results and the transfer of new technologies to the practicing field forester;

d. provinces and industry were to be responsible for "basic forestry" (prompt regeneration after cutting), while federal funds were to be devoted to intensive forest management and the rehabilitation of the backlog of non-satisfactorily regenerated lands;

e. agreements would need to ensure that federal funds spent would result in incremental spending on the part of the provinces and industry;

f. privately-owned woodlands would be emphasized; and

g. forest management Agreements would be subject to evaluation to assess effectiveness.

The Gaspe-Lower St. Lawrence Forest Development Plan was unilaterally declared by the federal government in 1983. It is delivered entirely by the Canadian Forestry Service, and provides grants for forest management and renewal to private landowners in the Gaspe region. Such programs are not available to landowners elsewhere in the province. It is understood that negotiations are presently under way with Quebec to integrate this part of the Gaspe Plan with the Quebec Forestry Agreement.

There are presently two agreements with Nova Scotia; an initial Forest Resources Development Agreement signed in 1982, and a subsequent Forest Renewal Agreement signed in 1984.

The Newfoundland Forest Subsidiary Agreement expires in September 1985.

These fixed term forestry development agreements represent a federal initiative to alleviate a national crisis in Canada's forest resource. The long term, ongoing renewal of Canada's forests require that responsibilities for the long term reforestation and management of Crown lands be well defined, and the continuity of Forest Renewal funding be reasonably assured.

In the "Framework for Forest Renewal (1982)", it is stated that no further agreements will be signed unless provinces have forest renewal plans of at least 20 years duration. Current agreements are only for 5-year terms, and if they are not renewed, this could seriously affect the implementation of these long term plans. Some longer term commitment to forest renewal programs by both levels of government is essential. Consideration should be given to planning well in advance for the second generation of Forest Renewal Agreements.

In the past, few, if any, resources were devoted to forest management on federally-owned lands. Although these agreements focus primarily on provincial and private lands, they will also provide a source of funding for the CFS to begin intensive forest management on federal lands. Most of this activity will be directed toward upgrading the forest resources on Indian reserve lands, the principal beneficiaries of which will be the Native population.

The new agreements have resulted in significant direct delivery of many programs by the Canadian Forestry Service. This has resulted in some advantages and a disadvantage, depending on circumstances and the particular province involved. They are as follows:

a. Advantages

other provinces welcome the additional federal jobs and assistance in program delivery; and

having staff who are actually delivering programs may assist CFS to focus research projects more towards priority problems and needs in the field.

b. Disadvantage

there is some duplication of federal and provincial administrative and field staff.

The concept of "incrementality" underlies all the forestry agreements and is laudable in its objective to increase expenditures on forest renewal by the provinces and the private sector over previous levels. There are still some concerns about this concept, including for example:

a. the requirement that projects be incremental to past levels of investment is considered unfair to those forest companies which already had substantial forest renewal programs, prior to the signing of these agreements;

b. the fear that some provinces will still reduce their expenditures on forest management as compared to what they would have otherwise spent, if no federal funds had been forthcoming; and

c. the possibility that this concept will result in expenditures on projects of less importance or effectiveness, simply because they are "new" or easier to identify as being incremental. This concern was expressed by some provinces and forestry companies.

There is also some concern by the private sector in many provinces of insufficient input to the program planning and management process. The federal/provincial management committees established under the agreements, for example, did not seem to allow for adequate consultation with the forest industry.

## ASSESSMENT

In general, the federal/provincial forestry agreements made under the Economic and Regional Development Agreements (ERDAs) are effective in:

a. contributing towards the achievement of the national Forest Renewal Policy of 1982;

b. providing for the shared funding of enhanced forest renewal and management programs by the federal and provincial governments, the forest industry, and private woodland owners.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Continuing negotiations with Quebec with the view to integrating the forestry part of the Gaspe-Lower St. Lawrence Economic Development Plan with the Quebec Forestry Agreement.

b. Offering to modify existing forestry agreements with those provinces who wish it, with a view to resolving problems relating to direct delivery of programs by the Canadian Forestry Service, or resulting from the concept of "incrementality".

c. Initiating discussions with the provinces and the forest industries to address how to expedite the long term renewal and management of Canada's forests.

d. Giving priority to maintaining the principles enunciated in the Forest Sector Strategy and the Framework for Forest Renewal on a long-term basis. This is imperative for stability, effective planning, and development of expertise.

e. Providing for beneficiary input within the management committees to expedite and coordinate the successful completion of the agreement activities within the same timeframe.

f. Limiting the CFS's administration of the Federal-Provincial Forest Resources Agreements to policy initiatives only and maintaining person-years at the 1984/85 level.

## APPENDIX A

## FEDERAL-PROVINCIAL FOREST RESOURCE DEVELOPMENT AGREEMENTS

| | Funding ($Millions) | |
|---|---|---|
| | Total | Federal Share |
| British Columbia (1985-90) | | |
| a. Backlog Reforestation | 199.5 | 95.5 |
| b. Intensive Forest Management | 86.0 | 47.0 |
| c. Implementation, Communications | 14.5 | 7.5 |
| **TOTAL** | 300.0 | 150.0 |
| Alberta (1984-85) | | |
| a. Reforestation | 7.4 | 1.0 |
| b. Applied Research, Technology Transfer and Opportunity Identification | 14.5 | 9.5 |
| c. Public Information, Evaluation & Administration | 1.1 | 1.0 |
| **TOTAL** | 23.0 | 11.5 |
| Saskatchewan (1984-89) | | |
| a. Forest Renewal | 17.5 | 6.5 |
| b. Growth Enhancement Stand Tending | 3.23 | 2.615 |
| c. Technonolgy Advancement and Transfer | 6.570 | 4.185 |
| d. Administration, Evaluation & Public Information | 0.7 | 0.35 |
| **TOTAL** | 28.0 | 13.65 |

|  |  |  |  |
|---|---|---|---|
|  | Manitoba (1984-89) |  |  |
| a. | Forest Renewal | 7.203 | 2.0 |
| b. | Intensive Forest Management | 5.025 | 3.625 |
| c. | Applied Research, Technology Transfer & Opportunity Identification | 13.832 | 6.885 |
| d. | Public Information, Evaluation & Administration | 1.1 | 1.070 |
| **TOTAL** |  | 26.98 | 13.58 |

|  |  | **Funding** | **($Millions)** |
|---|---|---|---|
|  |  | **Total** | **Federal Share** |
|  | Ontario (1984-89) |  |  |
| a. | Forest Management & Renewal Operations | 133.0 | 63.5 |
| b. | Forest Management & Renewal Support | 5.0 | 2.5 |
| c. | Innovative Programs | 8.0 | 6.0 |
| d. | Administrative, Communications & Evaluation | 4.0 | 3.0 |
| **TOTAL** |  | 150.0 | 75.0 |
|  | (A) Quebec (1985-90) |  |  |
| a. | Crown Land Forest Management | 190.0 | 95.0 |
| b. | Management of Private Woodlands | 90.0 | 45.0 |
| c. | Management of Federal Woodlands | 4.0 | 4.0 |
| d. | Greenhouse Infrastructure | 10.0 | - |
| e. | Administration, Communications & Evaluation | 6.0 | 6.0 |
| **TOTAL** |  | 300.0 | 150.0 |

(B) Gaspe, Lower St. Lawrence Economic Development Plan - Forest Development Program (1983-88)

| | | | |
|---|---|---|---|
| a. | Intensive Forest Management - Private Woodlot Owners | 17.760 | 17.760 |
| b. | Information Program | 0.641 | 0.641 |
| c. | Administration | 3.550 | 3.550 |
| d. | Technical Studies - (Private Woodlot Owners) | 0.332 | 0.332 |
| **TOTAL** | | 22.283 | 22.283 |

New Brunswick (1984-89)

| | | | |
|---|---|---|---|
| a. | Forest Management | | |
| | - Private Lands | 12.625 | 12.625 |
| | - Federal Lands | 0.5 | 0.5 |
| | - Provincial Crown Lands | 56.5 | 24.8 |
| b. | Forest Management Planning & Development | 4.2 | 3.2 |
| c. | Development of Private Woodlots | 2.875 | 0.575 |
| d. | Public Information, Education, Evaluation | 0.7 | 0.6 |
| **TOTAL** | | 77.4 | 42.3 |

Nova Scotia
(A) Forest Resource Development Agreement (1982-87)

| | | Funding ($Millions) | |
|---|---|---|---|
| | | **Total** | **Federal Share** |
| a. | Forest Resource Enhancement | | |
| | - Private Lands | 27.8 | 27.8 |
| | - Crown Lands | 21.0 | - |
| b. | Forest Industry Development | 0.5 | - |
| c. | Human Resources Development | 3.0 | - |
| d. | Education, Information & Evaluation | 1.126 | 0.563 |
| **Sub-total** | | 53.426 | 28.363 |

| | | |
|---|---|---|
| (B) Forest Renewal Agreement (1984-87) | | |
| a. Forest Renewal | 10.0 | 9.0 |
| b. Group Management Ventures | 1.2 | - |
| c. Research, Development & Strategic Planning | 4.3 | 2.2 |
| d. Forest Nursery Upgrading | 0.008 | - |
| e. Education, Technology Transfer, Evaluation & Training | 0.9 | 0.5 |
| **Sub-total** | 16.408 | 11.7 |
| **TOTAL** | 69,834 | 40.063 |

| | | |
|---|---|---|
| Prince Edward Island (1983-88) | | |
| a. Private Land Management | 4.494 | 4.494 |
| b. Crown Land Management | 4.040 | 3.060 |
| c. Forest Development | 6.368 | 4.080 |
| **TOTAL** | 14.902 | 11.634 |

| | | |
|---|---|---|
| Newfoundland (1981-85) | | |
| a. Silviculture | 21.900 | 19.710 |
| b. Access Roads | 17.930 | 16.137 |
| c. Forest Protection | 3.620 | 3.258 |
| d. Forest Resource Inventory & Planning | 4.157 | 3.7413 |
| e. Forest Industry Development | 4.486 | 4.0374 |
| f. Forestry Economic Stimulation Program | 8.700 | 7.830 |
| **TOTAL** | 60.793 | 54.7037 |

# FOREST BIOMASS RESEARCH (ENFOR)

## OBJECTIVE

To generate sufficient knowledge and technology to realize a marked increase in the contribution of forest biomass to Canada's energy supply.

## AUTHORITY

Cabinet decision 1978, annual appropriations.

## DESCRIPTION

Forest Biomass Research (ENFOR ENergy from the FORest) is a contract R&D program managed by the Canadian Forestry Service (CFS). It was initiated in 1978 as part of an interdepartmental effort to reduce Canada's dependence on oil and other non-renewables by developing alternative sources of renewable energy.

The program is funded through the Panel on Energy R&D of the Department of Energy, Mines and Resources (EMR). Up to 1984/85, annual budgets averaged $3 million. For 1985/86 this was cut to $1.237 million, and further reductions are budgeted for each of the next 3 years.

ENFOR is coordinated by CFS headquarters through a small secretariat and a technical committee which includes representatives from each of CFS' regional establishments and the Petawawa National Forestry Institute (PNFI). Project proposals are submitted annually through CFS establishments for assessment and recommendation by the technical committee. A small number of projects (5% of total budget) are conducted in-house by CFS researchers when necessary expertise is not otherwise available.

Projects conducted under ENFOR address five main subject areas: forest biomass resource assessment; mechanization of procedures for harvesting and processing forest biomass from logging residues, brush, and non-commercial stands; environmental impacts of forest biomass harvesting; silvicultural techniques for forest biomass production; and socio-economic questions.

A small proportion ($172,000 annually) of ENFOR funds is used to support activities of the International Energy Agency's Forestry Energy Agreement. This includes projects of international cooperation studying biomass growth, production, harvesting and processing in short-rotation forestry and conventional forestry, as well as conversion of forest biomass to more readily usable forms. The present agreement is expected to be renewed as a three-year Bioenergy Agreement with a slightly wider scope, beginning in 1986. Canada has benefited significantly from the information generated and shared through this program, and has played a lead role in the international forest energy R&D field.

## BENEFICIARIES

The forest industry and Canadians as a whole have benefited from this program.

## EXPENDITURES (000's)

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | - | - | - | - | - |
| Other O&M | 3844 | 2664 | 1040 | 928 | 703 |
| Capital | 25 | 25 | 25 | 25 | 25 |
| Grants/ Contributions | 50 | 172 | 172 | 172 | 172 |
| **TOTAL** | 3919 | 2861 | 1237 | 1125 | 900 |

### Financial commitments - projected

**1985/86:** $1,237,000 is committed to signed contracts.

**1986/87:** of the $1,125,000, $172,000 has been committed to Canada's contribution to the International Energy Agency's Forestry Energy Agreement. There is a total of $563,500 uncommitted.

**1987/88:** of the $900,000, $172,000 has been committed to Canada's contribution to the International Energy Agency's Forestry Energy Agreement.

There is a total of $1,681,000 in uncommitted funds from 1986/87 - 1988/89.

## OBSERVATIONS

Since the program's inception, there have been a number of major accomplishments. The first national forest biomass inventory for Canada has been completed benefiting all regions of the country. Canada has some 27 billion oven-dry tonnes of forest biomass, the equivalent of about 87 billion barrels of oil.

Several major pieces of equipment for harvesting and processing forest biomass have been designed, developed and successfully field-tested.

A computer model has been developed, refined, and calibrated for a variety of forest conditions. It enables forest managers to predict the growth of forest stands over multiple rotations of intensive management, particularly those associated with the complete removal of organic material from the forest in biomass harvesting. The model has been, or is being calibrated for application to forest conditions in coastal British Columbia, Alberta, Central Canada and Newfoundland.

Fast-growing species such as willows, Japanese larch and green ash are being tested in energy plantations in Newfoundland, Quebec and Ontario.

The forest industry throughout Canada, particularly pulp and paper companies, has been successfully encouraged to integrate biomass harvesting, (non-commercial trees and logging and mill residues) with their product harvesting, and to use the biomass to partially replace oil in their mill boilers.

In addition, more than 90 scientific publications have been produced.

## ASSESSMENT

The objectives of the program have been reached, with sufficient knowledge and technology having been gathered to augment the contribution that forest biomass can make to Canada's energy supply at the present time.

CFS intends placing added emphasis on the commercialization of machinery and techniques for the remaining period of this program.

Given that the original objectives of the program have been met, it is recommended that further financial commitments not be made. While honouring existing commitments, no new ones should be undertaken. If research on commercialization of machinery and techinques is considered a priority, such activities could be funded out of CFS's A-Base research funds.

## OPTIONS

The study team recommends to the Task Force that the government consider ceasing to make further financial commitments under this program. Existing commitments should be met but any research proposals considered a priority should be funded out of existing A-Base research funds.

## FOREST INDUSTRY RENEWABLE ENERGY PROGRAM (FIRE)

### OBJECTIVE

To encourage the replacement of fossil fuels by using proven bioenergy technology and renewable energy sources such as combustible biomass residues.

### AUTHORITY

Cabinet Decision: 284-78 RD, National Energy Program, October 28, 1980.

### DESCRIPTION

The FIRE program provides financial assistance in the form of contributions to industrial, commercial, and institutional establishments to convert to or install energy facilities using wood residue, municipal waste, industrial waste, peat, or other biomass. Contributions cover from 10% to 20% of eligible costs for fuel-handling and -burning equipment and electrical generators.

FIRE projects involve one or more of the following elements:

a. direct combustion or gasification of biomass energy that will be used by the applicant organization and/or community;

b. conversion of biomass into prepared solid fuels which have enhanced heating value, transportability, or storage properties;

c. incineration and recovery of pulp mill spent sulphite liquor to produce a net energy surplus;

d. cogeneration using biomass as a fuel to produce two or more forms of energy such as electricity and process steam.

Final project costs are audited before payment of the holdback amount is released. A final element under the FIRE program is to provide engineering evaluation and technical transfer of successful bioenergy projects which have been supported to date.

## BENEFICIARIES

Canadian establishments who convert to or install energy facilities using wood residue, municipal waste or other biomass as a replacement to fossil fuels.

## EXPENDITURES ($000's)

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 7 | 7 | 7 | 3 | - |
| Salaries | 230 | 286 | 332 | 142 | - |
| Other O&M | 451 | 299 | 250 | 100 | - |
| Capital | - | - | - | - | - |
| Grants & Contributions | 7,069 | 11,050 | 19,418 | 5,758 | 2,000 |
| **TOTAL** | 7,750 | 11,691 | 20,000 | 6,000 | 2,000 |

## OBSERVATIONS

From the program's inception, 179 projects have been supported throughout Canada for an estimated fossil fuel replacement of 8.5 million barrels of oil equivalent per year. The corresponding private sector investment associated with these projects is estimated at $580,000,000. It is estimated that over 90% of this amount has been spent on Canadian goods and services.

| Region | No. of Projects Supported | Private Sector Investment ($ millions) | Barrels of Fossil Fuel Replaced |
|---|---|---|---|
| Atlantic | 27 | 150 | 1,932,000 |
| Quebec | 54 | 130 | 2,155,000 |
| Ontario | 42 | 140 | 1,627,000 |
| Prairies | 14 | 20 | 553,000 |
| B.C. & Territories | 42 | 140 | 2,236,000 |
| **TOTAL** | 179 | 580 | 8,503,000 |

**No. of Projects Supported (By Industry Type)**

| Region | Pulp & Paper | Wood Industries | Institutional /Municipal | Other | Total |
|---|---|---|---|---|---|
| Atlantic | 14 | 1 | 4 | 8 | 27 |
| Quebec | 15 | 26 | 6 | 7 | 54 |
| Ontario | 4 | 21 | 6 | 11 | 42 |
| Prairies | 3 | 11 | - | - | 14 |
| B.C. & Territories | 11 | 27 | 2 | 2 | 42 |
| **TOTAL** | 47 | 86 | 18 | 28 | 179 |

The employment benefits associated with these 179 projects has been estimated as 700 PYs of full time operating staff for these bioenergy installations and 6,000 PYs of construction work during project installation.

FIRE is one of several programs with similar objectives within the Department of Energy, Mines and Resources (EMR) and also overlaps to some extent with similar programs coordinated by Environment Canada.

The program has only partially achieved its objective of replacing 19 million barrels of oil per year. Present replacement is 8,503,000 barrels of oil per year. There now exists basic information that would be required for energy generation.

The FIRE program was scheduled to terminate on March 31, 1986. Applications are no longer being accepted and funding has been fully allocated. The program has been extended to March 31, 1988 to allow payments to be made for approved projects, evaluations and final wrap-up activities. Demonstration of results will continue under the ENERDEMO Program.

## ASSESSMENT

The FIRE program provided focus on energy alternatives during a period of perceived energy shortage. The need for such a program at this time has declined.

**OPTIONS**

The study team recommends to the Task Force that the government consider terminating the Forest Industry Renewable Energy Program as scheduled. No new project applications should be accepted.

## CANADIAN INTERAGENCY FOREST FIRE CENTRE
## (CIFFC)

### OBJECTIVES

To facilitate inter-agency cooperation in sharing fire fighting resources and to strengthen Canada's overall forest fire fighting capability.

### AUTHORITY

Development and Research Act, Order in Council P.C. 1984-2 and Treasury Board Minute 791472.

### DESCRIPTION

CIFFC, a joint undertaking of the federal and provincial governments, was established in 1982 to facilitate more effective inter-agency cooperation and sharing of fire fighting resources in Canada. The Centre also coordinates fire fighting assistance with the United States, under the terms of a Canada/United States Forest Fire Fighting Assistance Arrangement.

CIFFC does not fight fires directly - rather, its role is to monitor the national fire situation and coordinate the sharing of fire fighting aircraft and other resources throughout the country and from the United States. The Fire Centre provides daily situation reports on forest fire activity and the availability of fire fighting equipment. It will also play a major role in coordinating the sharing and positioning of the National Airtanker Fleet.

CIFFC functions as an independent, non-profit agency under the Canada Corporations Act. The Government of Canada participates in the CIFFC program on behalf of the Canadian Forestry Service, Parks Canada and the Northern Affairs Program, (DIAND) and contributes one-third of the Centre's annual operating costs up to a maximum of $200,000 ($92,607 in 1985/86). The remaining two-thirds is contributed by the provinces on the basis of productive forest land.

Policy direction and long range planning for the Centre are provided by a Board of Corporate Trustees, comprised of the Deputy Ministers of Forestry of the participating governments.

**BENEFICIARIES**

As a National Centre, CIFFC services all provinces and the federal government. All member agencies benefit through increased interagency sharing of fire fighting resources and the overall improvement in the coordination of national fire fighting capability.

**EXPENDITURES ($000's)**

**Federal Contributions to CIFFC**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| Canadian Forestry Service (50%) | 33. | 45. | 46. | 47. | 55. |
| Parks Canada (25%) | 17. | 22. | 23. | 24. | 28. |
| Northern Affairs Program (25%) | 17. | 22. | 23. | 24. | 28. |
| **TOTAL** | 67. | 89. | 92. | 95. | 111. |

**OBSERVATIONS**

There is considerable support for this program among the beneficiaries. The need and success of this program have been proven by the improved effectiveness of fire control across Canada.

**ASSESSMENT**

CIFFC has proven to be an effective mechanism for monitoring the national forest fire situation, and the coordination of sharing of fire fighting equipment. The federal government's contribution to this program is justified based on the service provided to federal lands.

**OPTIONS**

The study team recommends to the Task Force that the government should maintain this program.

## NATIONAL FORESTRY STATISTICS (FORSTATS)

### OBJECTIVES

To acquire, summarize, analyze and publish data on Canada's forest resource and/or changes in that resource, at the national level.

### AUTHORITY

Forest Development and Research Act 1966-67.

### DESCRIPTION

Managed and conducted primarily at the Petawawa National Forestry Institute (PNFI), FORSTATS is responsible for the acquisition, summary and publication of forest resource data at the national level. The focus of the FORSTATS activity is on the production of the National Forest Inventory of Canada, and on the development of national "change data" statistics.

The National Forest Inventory is produced every five years (last one in 1981, next in 1986) in cooperation with provinces, territories and CFS regional establishments, and is a key element in the assessment of our national forest resource.

Detailed forest inventories are conducted by provinces and territories (other inventories are undertaken by some federal agencies and some private groups).

FORSTATS aggregates information and recodes it to a national grid which reports the location and extent of forest lands in Canada, including areas of forest lands, wood volume and biomass.

FORSTATS is mandated to improve, update and add to the national inventory data base, to create added data bases of information relative to value and extent of the resources, and to increase the level of standardization and compatibility among inventory agencies.

The "change data" activity within FORSTATS involves keeping the information up-to-date, and includes continual input of data on:

a. depletions to product forest due to harvesting, wildfires and insect and disease damage;

b. accruals due to forest growth;

c. management activities to protect or enhance the resource (e.g. silvicultural activities); and

d. changes in land ownership impacting on utilization of forest for wood fibre production.

There are FORSTATS representatives in each of the CFS regional establishments with responsibility for data delivery from the province. Some staff are also responsible for the production of periodic statistical reports on selected aspects of the forest resource. Information and data relating to worldwide forestry resources and activities are also collected by the International Forestry Relations group at CFS-HQ.

The Forestry Data Systems Program is closely related to FORSTATS and is responsible for developing the ways and means of establishing national information systems (e.g. DEVMIS - a management information system for rolling up data from the federal-provincial forestry agreements); national forestry data banks; and the production of national forestry maps. In short, this group is responsible for developing the means of data collection, summary, access and display. In undertaking this task the group has become expert in the utilization and demonstration of new technologies. This expertise is shared through advisory services to the provinces and to other federal agencies.

## BENEFICIARIES

The forest industry, federal and provincial forestry officials.

**EXPENDITURES (000's)**

| | 83/84 | 84/85 | 85/86 [1] | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 36 | 36 | 36 | 36 | 36 |
| Salaries | 1400 | 1400 | 1400 | 1400 | 1400 |
| Other O&M (Contracts & In-House) | 1000 | 1000 | 1000 | 1000 | 1000 |
| **TOTAL** | 2400 | 2400 | 2400 | 2400 | 2400 |

[1] In 1985/86, resources are sub-divided as follows: Core FORSTATS Program - 14.5 PY, $800,000; Forest Data Systems Program - 11.5 PY, $800,000; related regional and HQ activities - 10.0 PY, $800,000.

**OBSERVATIONS**

Major outputs of the FORSTATS program include:

a. a data bank on Canadian forestry resources coded under a uniform geographic information system nationwide;

b. national compilations of forestry inventory data, and of data on depletions (e.g. insect losses), accruals due to forest growth, forest management activities and land use/ownership changes;

c. computer systems to handle, analyse, access and display forestry statistics in a variety of forms to correspond to user needs;

d. publications (e.g. Canada's Forest Inventory, 1981) and other information needed for national and regional policy and planning requirements.

The program provides up-to-date and reliable data on the state of the forest resource without which well coordinated forestry programs would be impossible.

This program is wholly dependent on cooperation with the provinces and the United States Forestry Service. Since its conception five years ago a federal/provincial committee has been responsible for the establishment of standards and overall coordination.

The National Forest Inventory is developed with assistance from Statistics Canada which produces survey information on forestry relating to the financial state of the industry, economic factors, etc.

## ASSESSMENT

From a national policy perspective FORSTATS is an essential element in any decision regarding the exploitation and management of this important national resource. The expenditures for the program would seem to be minimal when compared to its importance.

An area of concern is cost recovery for services and publications supplied by FORSTATS. The National Forest Inventory is published every five years and is distributed at no charge. FORSTATS also supplies other information to industry, governments, universities, and the public at no charge.

Due to the importance of the program and the fact the provinces are still attempting to establish reliable inventories, it would appear necessary to maintain this program at its present level for several more years. Once a satisfactory system and inventory change data structure are achieved nationally the program could be reduced.

## OPTIONS

The study team recommends to the Task Force that the government consider maintaining this program at its present level until such time as it is fully implemented, then reduce resources consistent with the requirements to maintain the desired level of service.

Procedures should be introduced to establish a system for recovering costs related to the publications and service supplied.

# PROGRAMS FOR RESEARCH BY UNIVERSITIES IN FORESTRY (PRUF)

## OBJECTIVES

To encourage forestry research in universities, to complement research with the Canadian Forestry Service (CFS), to encourage the training of graduate students and improve the scientific expertise available for employment in forest research.

## AUTHORITY

The Human Resources Component of the Forest Sector Strategy for Canada 1983. Funding is approved from 1982/83 through 1985/86.

## DESCRIPTION

The Program for Research by Universities in Forestry (PRUF) was initiated in 1983, as part of the Human Resources Component of the Forest Sector Strategy for Canada. Like the other parts of the Human Resources Component, PRUF is a three-year program now in its final year.

The CFS designed the PRUF program to encourage forestry research among the university community to complement its own in-house research, as well as to encourage the training of graduate students and improve the scientific expertise available for employment in forest research in Canada. These PRUF objectives are being met by supplying contract funds for research at degree-granting universities in Canada.

The CFS publishes a list of research priorities and invites university staff members to submit proposals that directly complement these priorities or propose other new and innovative research studies in forestry. In 1985/86, topics given special emphasis included biotechnology, biological control, vegetation management, and forest productivity.

Every year far more proposals have been received than could be supported with funds available; in 1985/86, proposals were valued at six times the available funds ($1.6 million).

All proposals received are reviewed in depth by professional staff at CFS-headquarters and in at least one other CFS regional establishment or institute, and ranked in order of priority. This information is then passed to a senior CFS review committee which makes the final selection of proposals against available funds.

**BENEFICIARIES**

The forest industry, Canadian universities and CFS.

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 |
|---|---|---|---|
| PYs | - | - | - |
| Other O&M | - | 84 | 144 |
| Grants/ Contributions | 934 | 1,392 | 1,469 |
| **TOTAL** | 934 | 1,476 | 1,613 |

Present program authority terminates March 31, 1986.

**OBSERVATIONS**

In the three years that this program has been in existence, this process has resulted in an equitable distribution of approved projects across all regions of the country. Approximately 50% of funds were awarded to staff of the six forestry schools, and the remainder to a variety of other university departments, including biology, chemistry and economics.

Work carried out under the PRUF program has been of high calibre, and many of the results and published reports have been of direct use to CFS. The program has also provided a significant stimulus to forestry research at Canada's universities, and in many cases has contributed to further cementing the working relationships between CFS and those university departments engaged in forestry-related research. It is hoped to continue the program within the terms of a new CFS Human Resources Program for which a submission is currently being prepared.

In Newfoundland, PRUF has assisted Memorial University in developing a centre of excellence in the area of nematodes for the control of forest insect pests. Similarly, in Ontario, the University of Guelph has developed a good cooperative program with the Forest Pest Management Institute on the environmental effects of herbicides. The University of Saskatchewan has pioneered work in the area of ergonomics, and the University of Calgary has developed a program with the Petawawa National Forest Institute in the area of conifer flower induction. These universities do not have a forestry faculty.

PRUF also assisted in carrying out valuable research at the six forestry universities. The University of British Columbia developed expertise in improved processes and manufacturing systems for lodgepole pine, and on the effect of prescribed fire on growth and nutrition of juvenile plantations. The University of Alberta established programs in the area of fire management and growth and yield of lodgepole pine. In Ontario, both Lakehead University and the University of Toronto contributed significantly to wood quality and herbicide studies. Laval University has developed extensive expertise in the area of integrated pest management, while at the University of New Brunswick, studies related to wood production in balsam fir and effects of acid rain on forest soils provided good cooperative approaches with the regional CFS research program.

Concerns were expressed regarding the need for a review of proposed projects by CFS-headquarters and by one regional institute before forwarding to the senior review committee.

## ASSESSMENT

In general the PRUF program has been well accepted by industry and government as an effective tool in forestry R&D. Universities, however, seem to have some problems with the loss of autonomy. Nevertheless, the study team considers this program a model for effective R&D efforts in forestry.

Control over the research activity is maintained by CFS which allows research to be directed towards government and industry goals as opposed to pure research. This approach supports a general thrust of the study team's alternatives to have research geared more towards the needs of industry.

The review of research proposals by a regional institute as well as CFS-headquarters would appear to unnecessarily complicate the selection of projects for consideration by the senior committee and cause time delays. Regional input could be obtained without a formal referral to regional institutes.

In reviewing the projects that have been approved, the study team noted that a large proportion of projects were carried out by university staff. Given that an objective of the program is to increase graduate research, more emphasis should be placed on funding projects performed by research graduates.

The study team endorses this program for the following reasons:

a. it provides for research to be conducted outside the government;

b. it provides "spin-off" benefits for universities and assists in providing training, experience and expertise for future researchers; and

c. there is good direction and control of the nature of the research being carried out under the program.

## OPTIONS

The study team recommends to the Task Force that the government consider maintaining this program but improving it through a review of the project selection process to avoid unnecessary delays and duplication. Increased emphasis should be placed on research projects by graduate students.

# FOREST RESEARCH AND TECHNICAL SERVICES

## OBJECTIVE

To enhance the forest resource base through discovery, development, demonstration, implementation and transfer of innovations to solve problems and increase the efficiency and effectiveness of forest management.

## AUTHORITY

Forestry Development and Research Act, 1966-67.

## DESCRIPTION

Research is conducted in the areas of forest environment, production, utilization, and forest protection from fire, insects, and disease. Technical advice and scientific information is provided to federal departments and agencies, the provinces, industries, academic institutions and other countries.

This activity also administers special cooperative research programs and provides financial support for forestry research to universities and other eligible organizations. In addition, specialized services are provided to federal departments and agencies, provinces and the forest industry.

Research is carried out to assess the impact of forestry practices on the environment, the impact of environmental problems on the forest resource and to further the knowledge of forest ecosystems.

Research is conducted to improve the general quality of major tree species, and develop improved methods of reforestation, tree and stand growth and forest management systems.

Research is directed towards increasing knowledge on forest biology, the management of forest insects, diseases and weeds, improved methods of prediction, detection, prevention and control of forest fires, and pest control including biological and chemical agents. In addition, research is conducted on the most urgent forest pest problems in order to quickly develop methods that will reduce damage from particular insects and diseases with minimal adverse effects on the environment.

Research is directed toward the utilization of forest resources and development of new products, codes and standards which are required to retain foreign markets. Cooperative agreements with the private sector support research in wood products and harvesting (i.e. FORINTEK and FERIC). The annual federal contribution to FORINTEK is $4.2 million and to FERIC $1.4 million.

Forestry services implements and maintains a surveillance program that detects, monitors and reports on the distribution and impact of insects and diseases on the forest. It is also responsible for the compilation and maintenance of a computerized inventory of the forest resource base. Technical advice, forest resource data, technology transfer and publications for scientific information provide forest managers, industry and the general public with information necessary for sound management. In addition, transfer payments in the form of grants and contributions are provided to universities and other eligible organizations for the conduct of forestry research.

A National Forest Research Advisory Council is now in place to priorize all forest research activities.

## BENEFICIARIES

There are many beneficiaries of the outputs from this program:

a. senior federal officials responsible for developing federal forestry policy and strategy, negotiating federal/provincial agreements, and designing other special economic programs to sustain the health of the forest industry;

b. senior provincial officials concerned with development agreements, regional supply situations relative to industry needs, management programs designed to increase forest growth or improve protection measures, etc.;

c. the forest community at large, including industry, government and the general public as a basis for improved understanding of Canada's forest resource situation and the need to manage it more effectively.

The benefits deriving from these research programs are vital to the success of the developing forest renewal programs.

**EXPENDITURES ($ 000's)**

| | Estimates 85/86 | | Forecast 84/85 | | Actual 83/84 | |
|---|---|---|---|---|---|---|
| | **$** | **PYs** | **$** | **PYs** | **$** | **PYs** |
| Forest Environ. Res. | 3,796 | 79 | 3,824 | 78 | 4,200 | 77 |
| Forest Product Res. | 8,055 | 192 | 8,114 | 190 | 8,914 | 187 |
| Forest Protect.Res. | 10,331 | 215 | 10,407 | 213 | 11,431 | 210 |
| Forest Utilization Research | 9,269 | 3 | 9,337 | 3 | 10,256 | 3 |
| Forestry Services | 11,216 | 179 | 11,298 | 177 | 12,410 | 174 |
| Management & Admin. | 53,240 | 345 | 52,783 | 340 | 34,410 | 335 |
| **TOTAL** | 95,907 | 1,013 | 95,763 | 1,001 | 81,621 | 986 |

**OBSERVATIONS**

Six CFS Regional Forest Research Centres are well established across Canada and conduct research directed to the variations in forest regions from St. John's to Victoria. Two facilities, the Forest Pest Management Institute at Sault Ste. Marie and Petawawa National Forestry Institute at Petawawa are dealing with national issues in pesticide management, inventory, forest fire protection, as well as many basic research projects.

Forest research was severely reduced in the past and especially so in the early 70s, when as much as a 50% reduction in personnel occurred. In addition, minor cutbacks have also jeopardized long-term research programs as increasing overhead costs intrude on the resources necessary to achieve objectives of specific programs. As well, rapid changes in priorities, such as acid rain, not planned for in the annual budgeting process, have restricted ongoing research.

Forest Renewal Agreements are resulting in a much better understanding and coordination between the researchers and the forest community at large.

The organization of a National Forest Research Advisory Council, as well as provincial Forest Research Advisory Committees, which include representation by all sectors of the forestry community, is a positive development towards limiting basic research, identifying priorities for research relative to forest renewal needs and eliminating unnecessary activities.

Research and development results have an important bearing on timber supply and market potential, and therefore on our competitive position in world markets. Neglect of science and technology is just as serious as neglect of regenerating cutover forests. R&D enables us to be more cost-effective in the use of scarce forest renewal funds. Canadians now spend less than 0.7% of the forest products sales dollar on R&D, compared with 1.5% in the U.S. We also lag behind our competitors in Scandinavia, Japan and New Zealand. A 1979 report indicated that $142 million was spent on forestry research. Of this total, 38% was spent by the federal government, 39% by industry, 18% by the provinces and 5% by universities.

In 1985/86, 345 person-years and $53 million are allocated to direct, coordinate and provide program management to the Research and Technical Services activity. Approximately 50% of these person-years and $14 million relate to the management and administration of the physical plant of the research establishments. In addition, some funds are provided for upgrading and the construction of major research facilities.

## ASSESSMENT

Because of the extreme variation of the forests and forest conditions across this vast country region-by-region, there is limited commonality of specific research requirements. In addition, the forest renewal activity is at many different levels province-by-province. It is therefore considered effective to leave the present organizational structure of six regional centres and two national institutes in place. It is essential, however, to ensure that duplication of research effort does not occur among these geographically separated centres.

Current initiatives to increase the input of the private sector and the provinces in the establishment of research priorities, and the allocation of research resources through advisory committees should be continued.

The study team is of the opinion that an expenditure of $53.2 million and 345 person-years for the management and administration of research is excessive and should be reduced.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Developing a forest products marketing strategy, with the private sector and the provinces, identifying those forest products that can generate significant value for Canada, considering worldwide supply and demand.

b. Directing CFS to focus its research and development activities on those resources and products capable of generating significant value, and on problems limiting the production of those products, and terminating activities that do not directly support national objectives.

c. Continuing to strengthen advisory committees to direct R&D activities. Such committees should be composed of a reasonable balance of government and private sector members.

d. Directing CFS to place a greater priority on technology transfer to effectively inform all sectors of the forest community on the latest developments.

e. Maintaining the current number of scientific and technical staff working at CFS centres. The management and administrative component of the research program however, should be reduced by 20%.

f. Reducing the A-Base complement of the research staff by 10% over the next two years and replace it by term secondments from industry and universities.

## INCOME TAX OVERVIEW

The Income Tax Act (the Act) contains a number of measures intended to encourage an investment or an activity. These incentive measures take the form of either a deferral or an outright reduction of income tax otherwise payable.

Most of the special provisions affecting the natural resource sector are designed to encourage exploration and/or capital spending. Tax deferral is available where a business incurs exploration expenditures or acquires buildings and equipment used in a mining operation or in a pulp and paper processing activity. A tax reduction is available, in the form of an investment tax credit, where a business acquires qualified property for mining, logging and other such activities.

The following table identifies the federal tax deferral and/or reduction resulting from selected measures as well as the federal tax paid by corporations in the mining, forestry and fisheries industries ($ million):

| | 80 | 81 |
|---|---|---|
| **Accelerated Depreciation (deferral)** | | |
| Mining & Metals | 438 | 524 |
| Forestry | 276 | 383 |
| | 714 | 907 |
| **Resource Sector Provisions (deferral/reduction)** | | |
| Mining & Metals | 526 | 244 |
| **Investment Tax Credit (reduction)** | | |
| Mining & Metals | 128 | 73 |
| Forestry | 102 | 69 |
| Fisheries | 1 | 1 |
| | 231 | 143 |

**Federal Tax Paid**

| | | |
|---|---|---|
| Mining & Metals | 806 | 388 |
| Forestry | 431 | 259 |
| Fisheries | 4 | 3 |
| | 1,241 | 650 |
| All Sectors | 8,087 | 7,921 |

The deferral identified above is computed as the excess of the tax deduction allowed over the corresponding deduction for financial statement purposes, multiplied by the federal income tax rate. This amount has been referred to as the federal "tax expenditure" but such terminology is misleading. Since the measures provide only a deferral of income tax otherwise payable and the tax will be recaptured or repaid at a later date, the true cost should be measured as the present value of the income tax deferred over the period of the deferral.

## OBSERVATIONS

Many of the special provisions were introduced originally as temporary measures, with a specific purpose (such as to promote investment in certain types of capital property). In almost all cases, the measures have been expanded, extended and eventually, made a permanent feature of the Act. The effect of this action has been to convert a temporary incentive into a permanent advantage to an industry or activity.

In view of the significant amounts of deductions and credits claimed by qualified taxpayers each year, it is surprising that the Department of Finance has no basis for assessing the effectiveness of these measures in achieving their originally stated purpose of encouraging investment. There is a significant delay in obtaining statistics on actual taxes paid and deductions claimed.

It is generally agreed that Canada's income tax system must be competitive with the tax systems of other nations, in order to attract and maintain investment in natural resource industries, and to ensure that these industries are not placed at a competitive disadvantage when compared to similar businesses being carried on in other jurisdictions.

A recent study prepared by the Mineral Policy Sector of Energy, Mines and Resources compares taxation of the mining industry in Canada (federal and provincial) and in other countries with significant mining activities. In terms of the impact of income taxes on internal rate of return calculations, the study indicates that all of the countries have substantially similar tax systems and Canada's system compares favourably with the others. The competitiveness of Canada's system will be substantially improved if proposed measures are introduced to allow transferability of income tax losses within corporate groups.

The general reaction from industry is that it is difficult to isolate the impact of a particular income tax measure such as investment tax credit. Instead, these provisions are viewed as part of a package of measures that determine the overall level of taxation on the industry.

In order not to inhibit economic activity, the income tax system should remain stable over time. This is perhaps the most important requirement of an effective tax system. Following the federal/provincial tax disputes of the 1970s, the effects of the National Energy Program and other such shocks, the natural resource sector is understandably "gun-shy". The current mix of tax measures appears to be understandable and acceptable to industry, federal and provincial governments.

In part for the reasons outlined above, many industry representatives are skeptical of the recent proposals for change to the corporate income tax provisions. While acknowledging the virtues of simplicity and a lower tax rate, they seem to prefer a system that they know and understand.

In addition, the resource sector is concerned that the proposals to lower the tax rate and broaden the base could significantly increase the tax burden on their industry. Businesses in the resources sector are required to make substantial up-front investments for exploration and capital assets. The Act effectively permits recoupments of such costs before income taxes become payable.

Although the budget proposals may not increase the total tax dollars paid over the life of a project, they appear to advance the timing of payment of tax. Based on discounted cash flow analysis, such a change can significantly affect the economics of an investment proposal. The impact of this feature of the proposals should be reviewed and discussed with industry in more detail.

Mining and forestry are very cyclical industries. Presently both industries are struggling through periods of low profitability, with the result that tax deferrals and reductions are of limited value. The pool of available deductions and credits has grown to the point that the Department of Finance is seriously concerned with future revenue implications. In fact, Finance is attempting to restrict the utilization of benefits that it previously introduced into the tax system.

Due, in part, to the current economic conditions, industry has become very conscious of the non-income tax costs imposed by all levels of government. Such items as sales tax, unemployment insurance, the cost of regulatory iniatives, provincial mining taxes and the cost of product from regulated utilities all add up to a significant uncontrollable cost of doing business.

## ASSESSMENT

The overall conclusion to be drawn from these observations is that the income tax system is not well suited to providing incentives or stimulus to economic activity -- results are difficult to predict and to measure. Through a series of small steps, all leading in the same direction, the federal government has piled tax reduction on top of tax deferral and tax incentive to the point that further incentives are of academic interest only -- less than one-third of all corporations in the natural resource sector are taxable. Government efforts would be more effectively directed towards the reduction of non-income tax costs imposed on the industry (through regulation and social programs) support for lower cost sources of financing, including flow-through shares, and encouragement of economic activitiy and wealth creation.

As proposed in the May 23, 1985 Budget, in order to reduce complexity and eliminate bias, certain incentive measures that presently exist in the Act should be eliminated and the corporate tax rate should be correspondingly reduced. In developing alternative legislation, the Department of Finance should consider the potentially negative impact of the proposals on the resource sector (due to the change in timing of allowable deductions and credits). The changes should be introduced in such a way as to minimize any sudden changes in the tax burden of the resource sector, thereby maintaining an element of stability.

# ACCELERATED DEPRECIATION

## OBJECTIVE

To promote capital investment in certain types of property.

## AUTHORITY

Income Tax Act (S.C. 1970-71-72, ch. 63, as amended) and Regulations

## DESCRIPTION

In computing its income for tax purposes, a business can deduct the cost of depreciable property acquired for use in the business. The annual depreciation deduction (or capital cost allowance) is determined by applying rates as prescribed by Income Tax Regulations, to the undepreciated capital cost of the property.

Regulations to the Income Tax Act identify various classes of depreciable assets and specify a rate for each. The principal classes relevant to the mining industry, and the applicable rates, are as follows:

a. Class 10 (30% rate) -- mining buildings and equipment acquired after the commencement of commercial production;

b. Class 12 (100% rate) -- the cost of a mine shaft, main haulage way or similar underground work incurred after the commencement of commercial production, and designated overburden removal costs for open pit mines;

c. Class 28 (greater of 30% or income from the mine) -- buildings and equipment used in a mining operation, including the cost of community property and services, acquired prior to the commencement of commercial production of a new mine, or in the course of a major expansion of an existing mine; and

d. Class 29 (50% straight line rate) -- equipment used in Canada primarily for manufacturing or processing beyond the prime metal stage.

In the forestry industry, equipment used for manufacturing and processing is included in Class 29 and qualifies for the 50% (straight line) rate. In fisheries, certain Canadian-built vessels qualify for accelerated depreciation.

In the year of acquisition, the allowable deduction is generally restricted to one-half of the above amounts. Also, the capital cost of the asset must be reduced by the amount of any investment tax credit or other government assistance received in respect of the asset.

To the extent that depreciation allowable for income tax purposes exceeds the amount computed based on the asset's economic useful life (generally equivalent to depreciation for financial statement purposes), the business is considered to have received an economic advantage through deferral of income tax otherwise payable. This advantage is recaptured in subsequent years when tax depreciation, being substantially used up in early years, is lower than depreciation for financial statement purposes.

## BENEFICIARIES

Generally, all businesses acquiring depreciable property which qualifies for accelerated rates of tax depreciation. However, all such businesses do not benefit equally -- the provisions are of maximum benefit to businesses that are in a taxable position and of lesser (or no) value to businesses that are incurring losses.

## EXPENDITURES ($ millions)

The following data relate to the 1980 and 1981 taxation years (latest available data). It represents the excess of capital cost allowance over book depreciation, multiplied by the federal tax rate.

|  | 80 | 81 |
|---|---|---|
| Mining sector | 438 | 524 |
| Forestry sector | 276 | 383 |
|  | 714 | 907 |

The available data does not reflect any tax expenditure in the fishing industry. This may be because businesses are not incorporated (individual data is not included here) or because book depreciation is taken on the same basis as tax depreciation.

There is a problem in determining the true cost of the accelerated depreciation provisions, relating to the method of calculating the federal government's "tax expenditure". Compared to an alternative of claiming tax depreciation based on the economic useful life of the asset, the accelerated depreciation provisions provide a limited deferral of income tax otherwise payable. The cost of such measures should, therefore, be computed as the present value of the income tax deferred over the period of the useful life of the asset. The Department of Finance instead measures only the excess of current year tax depreciation over depreciation for financial statement purposes. This method will arguably overstate the cost of the measures.

## OBSERVATIONS

Income tax legislation is often introduced to deal with specific problems or to react to events. For example:

a. special rules for tax depreciation on Class 28 (mining) assets were introduced as a partial offset to the repeal of a three-year tax holiday for new mines;

b. accelerated depreciation on manufacturing and processing assets was introduced as part of the Canadian response to U.S. incentives for export manufacturing.

In view of the mixed/multiple objectives of these measures, and the difficulty in isolating the reasons for business investment, the Department of Finance has not attempted to measure the incremental effect (i.e. cost/benefit) of these measures. Any attempts at measurement would, at best, be very subjective.

The accelerated depreciation provisions are an effective way of providing an incentive to companies that would otherwise be in a taxable position. The effect of the provision is to provide a significant deduction in computing taxable income in the early years of the project, thereby significantly influencing the discounted cash flow from the project.

Proposals to broaden the corporate tax base and lower corporate tax rates support valid objectives of simplicity and elimination of bias in the Income Tax Act. In view of the capital intensive nature of the resource industry, these proposals appear to have a negative impact on profitability (measured by the discounted cash flow method). The extent to which this impact will affect resource development and international competitiveness in the industry must be reviewed before the proposals are implemented.

This negative impact on the mining industry could be minimized (or eliminated) if the proposed measures continue to allow mining companies to deduct capital cost allowance up to the amount of income from a new mine (i.e. if Regulations 1101 (4a) and (4b), and 1100 (w) and (x) are retained).

## ASSESSMENT

The accelerated depreciation provisions are an important element of the overall package of measures that determine the level of taxation of the mining industry. They represent an effective way of providing broadly based assistance to all companies in the industry. We are unable to draw any conclusions on the effectiveness of the provisions as an incentive to invest. However, since the provisions are available to all taxpayers, including those that would make their investment without this benefit, these provisions may constitute an expensive and inefficient method of stimulating incremental investments.

## OPTIONS

The study team recommends to the Task Force that the Minister of Finance consider proceeding with proposals to broaden the corporate tax base and lower corporate tax rates, giving full consideration to the results of public consultations regarding this matter, and considering the potentially negative impact of the proposals on resource development in Canada.

# RESOURCE SECTOR PROVISIONS
## (Excluding Energy)

### OBJECTIVE

To promote the exploration for minerals, the exploitation and development of mineral resources, and the processing of ore to the prime metal stage.

### AUTHORITY

Income Tax Act (S.C. 1970-71-72, ch.63, as amended) and Regulations.

### DESCRIPTION

The various income tax provisions affecting the natural resource sector can be broadly categorized as affecting a) exploration, b) development or c) production. The provisions are briefly described below under the following headings:

Exploration

Canadian Exploration Expenses (CEE) are fully deductible in the year in which they are incurred, against income from any source. Any unclaimed balance can be carried forward indefinitely for deduction in future years.

Flow through share arrangements, in effect, permit an investor to treat the purchase price of shares as Canadian exploration or development expense, and to deduct the expense in accordance with the provisions of the Income Tax Act. The resource company obtains lower-cost financing and forgoes the income tax deductions associated with the exploration and development.

Development

Canadian Development Expenses (CDE - which include the acquisition costs of Canadian resource properties) are accumulated in a pool and are deductible against income from any source, at the rate of 30% of the unclaimed balance of the pool at the end of each year. Any unclaimed balance can be carried forward indefinitely for deduction in future years.

Production

A resource allowance equal to 25% of "resource profits" is deductible in computing taxable income. Resource profits are defined as net income (before exploration and development expenses, and interest expense) from:

a. the production in Canada of metals and minerals to a stage that is not beyond the prime metal stage, from Canadian mines operated by the taxpayer;

b. the processing (concentrating, smelting or refining) in Canada of ore from Canadian mines not operated by the taxpayer; and

c. royalties which are computed with reference to the amount or value of production from mining operations in Canada.

The resource allowance was introduced in 1976 to compensate for the non-deductibility of provincial mining taxes and royalties.

An earned depletion allowance is an additional deduction available to reduce taxable income. The earned depletion allowance is equal to one-third of the cost incurred in exploring for and developing mineral resources in Canada; acquiring processing assets for an existing mine or plant; and acquiring equipment for a new Canadian mine.

The earned depletion allowance is restricted, however, to 25% of net resource profits earned in a year. Any unclaimed balance can be carried forward indefinitely for deduction in future years (subject to the 25% limitation).

Net resource profits for this purpose include resource profits for purposes of the resource allowance, and income from the sale of Canadian resource property, less, the 25% resource allowance, Canadian exploration and development expenses claimed, and interest expense.

Exploration expenses incurred after April 19, 1983 generate earned depletion that is deductible against income from any source (but limited to 25% of a taxpayer's income). Such expenditures can therefore be available to investors using flow-through share arrangements.

Accelerated depreciation and Investment Tax Credit (ITC) provisions affecting the resource sector have been dealt with in separate assessments.

## BENEFICIARIES

Taxpayers carrying on resource exploration, development or production activities.

## EXPENDITURES ($ millions)

The following data represent (a) the excess of Canadian exploration expenses, Canadian development expenses and earned depletion allowances over depletion claimed for book purposes, and (b) the excess of resource allowance over provincial mining taxes and royalties, multiplied by the federal tax rate. The data is for the 1980 and 1981 taxation years (most recent data available):

| | **80** | **81** |
|---|---|---|
| CEE, CDE, earned depletion | 231 | 88 |
| Resource allowance | 295 | 156 |
| | 526 | 244 |

In addition, taxpayers in the mining sector had unused depletion deductions of $1.5 billion (from 1981 and prior years) available for carry forward to subsequent years.

## OBSERVATIONS

The excess of exploration and development tax deductions over corresponding financial statement deductions may not be an accurate reflection of the cost to the federal government of these measures. The ability to claim an accelerated write-off of qualifying costs provides only a limited deferral of tax. The true cost should, perhaps, be measured as the present value of the income tax deferral.

The income tax measures affecting exploration are generally favourable to the industry in that they provide up-front deductions for costs incurred. Similarly, the cost of depreciable property associated with developing a new mine is deductible immediately against income from the mine, and the cost generates ITCF. The resulting reduction of federal income tax recognizes the risk involved in exploration activities and the significant capital cost involved in developing a minesite for production. The income tax measures effectively allow recoupment of such cost before income tax becomes payable.

The mining industry has been hard hit by oversupply and low world prices for most metals. As a result, most companies have incurred losses for tax purposes and many have significant accumulated future tax deductions and credits. With relatively high debt/equity ratios and uncertainty over interest rates, financing is generally considered to be a much more important issue than income taxes at this time. Incentives available through the income tax system are of little value to many businesses and they are looking for ways to utilize the tax benefits in arranging lower-cost financing. These circumstances have created recent interest in flow-through shares, limited partnerships, carve-outs and other creative financing techniques.

The flow-through share provisions satisfy an important need as a method of obtaining low-cost financing for companies that are not able to currently utilize the income tax deductions for exploration and development expense. The provisions effectively require that exploration activity take place before the calendar year-end to maximize the deduction available to investors. This appears to result in sub-optimization of exploration programs, as the industry ends up rushing to meet its commitments. This problem could be overcome, in part, by allowing a business to "flow-through" expenditures made before February 28 of the following year or, alternatively, allowing the flow-through of expenditures made by a business at any time during the year (i.e. expenditures incurred prior to the issuance of the shares).

The mining industry appears generally satisfied with the federal income tax provisions. In our discussions with corporations, concerns were often focused on provincial tax matters and the non-tax costs imposed on the industry by government (such as the cost of social programs and regulatory requirements).

## ASSESSMENT

The existing package of federal tax measures affecting the resource sector is adequately carrying out the stated objectives. Improvements could be made to flow-through share provisions with no apparent increase in cost to the federal government.

## OPTIONS

The study team recommends to the Task Force that the Minister of Finance consider, in consultation with industry, developing proposed legislation to provide greater flexibility in the timing of exploration and development spending incurred in connection with flow-through share financing.

## INVESTMENT TAX CREDIT

### OBJECTIVE

To promote capital investment in certain types of property.

### AUTHORITY

Income Tax Act (S.C. 1970-71-72, ch.63, as amended)
Subsection 127(5)

### DESCRIPTION

In computing federal income tax, a business is entitled to claim an Investment Tax Credit (ITC) in respect of the purchase price of qualified property, qualified transportation equipment, qualified construction equipment, and certified property. Certain research and development activities will also generate an ITC.

This assessment is only concerned with ITC in the natural resource industries (mining, forestry and fisheries).

The rates at which ITC is computed range from 7% to 50% of the cost of the qualifying asset. The appropriate rate is dependent upon the region in which the property is to be used, as follows:

| | |
|---|---|
| Regional Development Incentives Act prescribed areas (certified property) | 50% |
| Nfld., N.S., P.E.I., N.B. & Gaspé | 20% |
| Designated regions | 10% |
| Other | 7% |

Qualified property includes new buildings, machinery and equipment to be used in Canada in specified activities. In the natural resource sector, these activities include:

a. prospecting, exploring for, or developing a mineral resource;

b. extracting minerals from a mineral resource;

c. processing, to the prime metal stage (or pellet stage for iron ore), ore from a mineral resource;

d. producing industrial minerals;

e. logging;

f. fishing; and

g. manufacturing or processing goods for sale or lease.

Certified property (which qualifies for a 50% ITC) includes new buildings, machinery and equipment acquired for use in specified lesser developed areas of Canada. The May 23, 1985 Budget proposed a one-year extension of the application of this special rate - for acquisitions prior to January 1, 1987.

The recent Budget also proposed a 50% ITC for property acquired for use "in a prescribed activity in respect of a project located on Cape Breton Island". The project must have a capital cost of $50,000 or more and must be approved by the Minister of Regional Industrial Expansion before July 1, 1988. Property must be acquired before 1993.

The Budget also proposed that the cost of property eligible for ITC must be reduced by the amount of government grants or other assistance, to eliminate "stacking".

A taxpayer claiming an ITC must reduce the cost of the asset, for tax depreciation purposes, by the amount of the ITC. Tax depreciation is therefore only available on the net cost of the asset.

ITCs were introduced in 1975. Originally they were available at a rate of 5% on qualified property. Since 1975, the definition of qualified property has been expanded; other types of property, as well as expenditures on scientific research, have been made eligible for the credit; the rate at which the credit is computed has been increased; and additional rate increases have been introduced for certain expenditures, regions, and taxpayers (specifically, Canadian-controlled Private Corporations (CCPCs) carrying on scientific research).

Originally, the ITC could be claimed against the first $15,000 of tax otherwise payable and against only one-half of the excess of tax otherwise payable over $15,000. Now, the ITC can be claimed against the full amount of tax otherwise payable.

Under present legislation a business can claim a cash refund equal to 20% (40% for CCPCs) of unused ITCs earned in a year, after April 19, 1983 and before May 1986. Unused and unrecovered (through cash refund) ITCs may be carried back, up to three years, and forward, up to seven years for offset against tax otherwise payable for those other years.

## BENEFICIARIES

All taxpayers (individual and corporate) that acquire qualified property are eligible to claim an ITC.

## EXPENDITURES ($ millions)

The following data represent investment tax credits claimed by corporations for the 1980 and 1981 taxation years (latest available):

| | 80 | 81 |
|---|---|---|
| Mining | 128 | 73 |
| Forestry | 102 | 69 |
| Fishing | 1 | 1 |
| **TOTAL** | 231 | 143 |

In addition, taxpayers in the above industry classifications had $165 million of unclaimed ITC (from 1981 and prior years) available for carrying forward to subsequent years.

## OBSERVATIONS

The ITC was originally introduced as a temporary (three-year) measure to stimulate investment in certain capital goods. This incentive has been expanded and enriched and is now a permanent feature of the Income Tax Act. Its application has been complicated by attempts to use this incentive to encourage regional development and to provide equal benefit to taxable and non-taxable corporations.

The Department of Finance has not evaluated the effectiveness of the ITC in stimulating investment. It has indicated that there are no accurate means of measuring the incremental effect of this incentive, or of determining whether the incentive promotes investment in the designated regions.

As a means of providing general assistance, or cost reduction, to taxpayers who invest in qualifying assets, the ITC is both effective and efficient. It does not provide equal benefit to all taxpayers, however, in that a business must have tax otherwise payable, in order to claim the credit. The introduction, in 1983, of a refundable portion of the ITC was designed to partially alleviate this problem.

The share-purchase tax credit (a mechanism to make ITC available to investors by attaching it to a new issue of common shares) has not been particularly popular, primarily because of the requirement that the new shares must be common equity. Generally, the issue of common equity has a diluting effect on existing shareholdings and recent stock prices in the mining sector have been too low to make new issues attractive.

## ASSESSMENT

Since the ITC is available to all taxpayers, including those that would make their investment without this benefit, ITCs may be an expensive and inefficient method of stimulating incremental investment. The difficulty of measuring the impact of ITCs on incremental investment or regional investment makes it difficult to comment on the value of ITCs as a method of encouraging new investment. However, ITCs are an efficient and effective method of providing general assistance, by way of cost reduction, to qualifying taxpayers who are in a taxable position.

Proposals to broaden the corporate tax base and lower corporate tax rates support valid objectives of simplicity and elimination of bias in the Income Tax Act. In view of the capital intensive nature of the resource industry, these proposals appear to have a negative impact on profitability (measured by the discounted cash flow method). The extent to which this impact will affect resource development and international competitiveness in the industry must be reviewed before the proposals are implemented.

## OPTIONS

The study team recommends to the Task Force that the Minister of Finance consider proceeding with proposals to broaden the corporate tax base and lower corporate tax rates, giving full consideration to the results of public consultation regarding this matter.

## OVERVIEW

## NATURAL RESOURCES ON INDIAN RESERVES

### Resource Potential

The special constitutional relationship, often called a "trust relationship", between the federal government and Native people is closely linked to the administration of reserve lands and resources. It affects some 340,000 Indians living on more than 2,200 separate parcels of reserve lands. These lands and the natural resources they contain are a source of economic benefits for Native people.

Natural resources are also of particular importance from an employment perspective. Over 15 per cent of the labour force on reserves in 1981 was involved in the primary sectors: mining, logging, and the traditional Native occupations of fishing and trapping.

### Context

Effective development of these resources for or by Native people is complicated by contentious and unresolved issues involving the nature of the Indian "interest" in reserve lands and the nature of federal trust responsibilities. These problems are compounded by the lack of a clear framework for devolution and self-government.

### Program Issues

DIAND has evolved into a department with conflicting accountability, objectives and policies. These problems place the department increasingly at risk of legal action for mismanagement of its "trust" responsibilities and hinder resource development on Indian reserves.

Conflicting accountability: Departmental accountability for monies, lands, and natural resources is not clearly established in either legislation or policy. Policies and regulations conflict with statutory standards and the laws themselves -- the Indian Act and the Financial Administration Act -- conflict. This creates serious problems of accountability. To what extent is the department accountable to Parliament, to Indian people, or to both?

Confusing roles and objectives: It is not at all clear whether DIAND's primary responsibility is for development or for protection; whether its role is to provide technical and professional, or simply administrative services. Two main areas of concern for resource development include:

a. Development impact assessment: Resource developments with major national, regional, or private sector benefits can have a severe impact on Native lifestyle. (See Northern Manitoba Flood note.) They can also open up opportunities for employment or other economic benefits. It was not clear to the study team to what extent the department should actively pursue opportunities or simply ensure that Indian people have the resources to defend their own interests. (See Resource Development Impacts note.)

b. Resource management: In many cases, bands must "surrender" their mineral interests to the Crown before development can occur. This conditional "surrender" gives the department authority to administer and manage the disposition of mineral rights according to terms set by the Government of Canada and conditions imposed by the band. The extent of this management responsibility is not clear. Does this responsibility relate primarily to administrative functions, such as the management of leases and permits and collection of revenues, or is there a further responsibility for active development?

The technical dilemma: DIAND capability is currently inadequate in terms of either general management or the provision of specialized advisory services. There is inadequate knowledge of the resource base and inadequate expertise to deal with complex technical issues that can arise. Many types of resources exist (timber, water, oil, gas and minerals) and they are spread over a large geographic area. Proposals being developed to deal with the present problems should consider the availability of expertise in other government departments and the private sector, the geographic diversity of the resources, and the cost of proposed developments against revenues from such developments.

**Assessment**

Study team members realized that these problems have taken generations to create and may take years to resolve. At the same time, however, they felt that concrete measures could -- and should -- be taken to cut through some of the tangle and facilitate resource development on reserves.

Measures outlined in the alternatives include: negotiation of new agreements with provinces which currently restrict mineral development on reserves; strengthening of programs to ensure that development projects are adequately evaluated in the context of Native impacts and long-term economic viability; and development of an organizational structure to provide services in keeping with federal responsibilities under the Constitution, without duplicating expertise available from other sources.

The question of the organizational structure of DIAND is now being addressed and greater emphasis is being placed on DIAND's responsibility to the Native people of Canada. It is the feeling of the study team that progress will be inhibited as long as DIAND continues to pursue a number of conflicting objectives which should be resolved at the political as well as bureaucratic level.

## INDIAN NATURAL RESOURCES AND TRUST FUNDS

### OBJECTIVES

To direct and manage natural resource activities on Indian reserves as part of the Minister's fiduciary responsibilities and obligations to the Indian people.

To manage Indian trust funds for the benefit of Indians or bands for whose use and benefit the funds are received or held.

### AUTHORITY

Sections 28(2), 53, 58(4), and 61-69 of the Indian Act; Indian Oil and Gas Regulations (PC 1977-1057, April 1977); Indian Mining Regulations (PC 1968-1865, October 1968); Indian Timber Regulations.

### DESCRIPTION

The reserves and trusts activity exists to protect the rights and interests of the Indian people of Canada as specified in the Indian Act, the Financial Administration Act, other legislation, and Indian treaties. The Minister, pursuant to the Indian Act, exercises trust authority on behalf of the Crown to: administer reserve lands and their resources; administer the trust funds of bands and the estates of certain individual Indians; and administer the elections of band councils, the passage of by-laws, and the Crown's treaty obligations.

Natural resource activities include enforcing statutes and regulations affecting mineral development; handling leases, permits and contracts; maintaining data on geotechnical and mineral entitlements on reserves; providing technical advice for the promotion of mineral development ventures and agreements; conducting geotechnical surveys to determine mineral potential; collecting royalties and revenues; and ensuring company compliance with Native training and employment commitments. Renewable resource management is generally handled under the Resource, Economic, and Employment Development Branch and is described in Appendix A.

Trust activities involve administration of sections of the Indian Act and regulations relating to funds held in trust for Indian bands and individual minor band members. Revenues are derived primarily from land leasing transactions and also include interest earned from all band accounts in the Consolidated Revenue Fund. Capital funds are mainly derived from non-renewable resource transactions and include funds obtained from the sale of lands. All capital and some revenue funds are expended on authorization of the Minister with the consent of the band council for the use and benefit of the band. In many cases, revenue funds are also managed and expended by bands by permission of the Governor in Council and pursuant to the Indian Act.

## BENEFICIARIES

Indian bands: About 340,000 Indians in 581 bands varying in size from 10 to more than 10,000.

Industry: A number of resource development companies, such as Shell Resources and Canada Cement Lafarge, have also benefited from natural resource projects on reserves.

## EXPENDITURES ($000's)

Natural Resources activities:

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 29 | 38 | 40 | 40 | 40 |
| Salaries | 933 | 1,270 | 1,437 | 1,437 | 1,437 |
| Other O&M | 899 | 1,054 | 1,275 | 1,324 | 1,429 |
| **TOTAL** | 1,832 | 2,324 | 2,712 | 2,761 | 2,866 |

Trusts activities: Trust Fund balances vary from year to year but have been steadily increasing to $845 million by the end of the 1984/85 fiscal year. Receipts in the same year were $795 million and disbursements $590 million. Departmental resources for management of these funds:

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 3 | 7 | 13 | 13 | 13 |
| Salaries | 97 | 234 | 467 | 467 | 467 |
| Other O&M | 7 | 30 | 69 | 69 | 69 |
| **TOTAL** | 104 | 264 | 536 | 536 | 536 |

**OBSERVATIONS**

Canada's approximately 2,200 Indian reserves range in size from a few acres to some 350,000 acres and comprise about 7,000,000 acres of land from coast to coast. These reserves have potentially exploitable natural resources including metallic and non-metallic minerals, oil, gas, and related hydrocarbons, sand, and gravel. Waters flowing through Indian reserves have development potential, as do the approximately one million hectares of reserve forest land in commercially viable regions. Trapping and sport fishing resources are also being exploited with some success, particularly in northern Quebec.

These lands and the natural resources they contain are a source of economic benefits for Indian people. These benefits are unevenly distributed. Four resource-rich Alberta bands have over $260 million, or $32,000 per capita in their Indian trust account balance, largely as a result of oil and gas development. In other cases, bands have less than $8 per capita in their trust accounts.

Indians on reserves are heavily dependent on natural resources for employment. More than 15% of the experienced labour force on reserves in 1981 was employed in the primary sector of the economy (fishing, forestry, logging, trapping, and mining) as compared with 5.7% for the general population.

Efficient development of these resources is complicated by contentious issues involving ownership of reserve lands and the nature of the trust relationship.

a. The Indian Act describes a reserve as "a tract of land, the legal title to which is vested in Her Majesty, that has been set apart by Her Majesty for the use and benefit of a band". The courts have generally held that the Indian interest is a "mere burden" on provincial title and that the provinces hold the ultimate right to resources once the Indian interest is surrendered (as it must be in the case of third-party development). The Special Parliamentary (Penner) Committee on Indian Self-government recommended constitutional changes "to recognize in law full Indian First Nation rights to the lands, waters, and resources of all areas now classified as reserves or in future considered as Indian lands".

Exploitation of non-renewable resources on reserves is thus generally possible only through federal-provincial agreements. These agreements sometimes conflict with the Indian Act and impose serious restrictions on mineral development. In Quebec, mineral resource development is virtually non-existent because of the lack of agreement. In New Brunswick and Nova Scotia, it is technically impossible under current agreements for the band to surrender its interest in the minerals as required by regulations and therefore "administratively impossible" for DIAND to grant permits and leases. In Ontario and British Columbia, legislation and agreements provide for a 50-50 split of revenues between the federal Crown (to be used for bands) and the provinces, thus reducing funds available to the bands from the development of resources.

b. The ability of the department to devolve responsibility for resource management to the bands is complicated by questions concerning the nature of the federal trust relationship and the legal capacities of band governments. Bands and band councils are essentially creations of the Indian Act. Their powers are restricted under the Act, and this has resulted in uncertainty about the legal capacity of bands and band councils to sign contracts, bring law suits, raise capital, and generally act in the name of the band. The lack of a legislative and policy framework for devolution also creates problems.

In part as a result of these issues, DIAND has evolved into a department with conflicting accountability, objectives, and policies. These problems place the department increasingly at risk of legal action for mismanagement of its "trust" responsibilities and hinder appropriate resource development by and for Indian people:

a. Conflicting accountability: As the Penner report points out: "the Department of Indian Affairs has responsibility for both program delivery and trust fund activity. These two functions give the department a dual objective and raise unresolved questions: Who is the client? Is the Department of Indian Affairs and Northern Development accountable to Parliament for public funds or accountable to Indian people?... Policies conflict with statutory standards and the laws themselves -- the Indian Act and the Financial Administration Act conflict".

b. Confusing roles and objectives: It is not all clear, according to internal audit reports, to what extent DIAND's primary responsibility is for development or protection, or whether it has technical and professional as well as administrative responsibilities. Resource development, in most cases, requires bands to "surrender" their mineral interests to the Crown. This conditional "surrender" gives the department authority to administer and manage the disposition of mineral rights according to terms set by the Government of Canada and conditions approved by the band. The scope of departmental management responsibilities is not clear. Does this responsibility relate primarily to administrative functions, such as handling of leases and permits and collection of revenues, or is there a further responsibility for active development requiring highly specialized, technical services?

Financial management of revenue is inadequate. A recent internal audit was highly critical of the department's organization, resources, and management of this activity which involved over 2,220 transactions, $795 million in receipts and $590 million in disbursements in 1984/85. The Penner report was equally critical and concluded that the "Department was ill-equipped to act as a bank".

The department is presently trying to provide a broad range of services covering both administration and resource development. It does not have the capability to meet this objective and, in most cases, lacks adequate inventories of resources with development potential:

a. A small Minerals East staff of 12 has an area of responsibility covering Manitoba, Quebec, Ontario, and the Atlantic provinces; 253 bands with 185,000 members, and 4.8 million acres, demanding expertise in oil, gas, peat, pits, groundwater, quarries, minerals, and related geoscientific and exploration activities.

b. The situation is even more critical in Minerals West. This office has 26 person-years responsible for managing one of the largest aggregations of oil and natural gas assets in Canada. It has been compared by the department to a middle-size oil and gas company based on assets and volume of production managed. The growing technicality and complexity of leases requires a level of expertise which Minerals West cannot provide with existing administrative resources, the cost of which is less than 1% of the value of production. Serious inadequacies also exist with respect to non-oil and gas activities; inventory information is inadequate.

c. Renewable resource capability is limited and fragmented. Efforts vary from region to region and are primarily focused on provinces where DRIE's Special Agricultural and Rural Development Agreement (Special ARDA) support is not available. (See Appendix A.)

## ASSESSMENT

The administration and development of natural resources is complicated by issues which have taken generations to develop. Development cannot proceed appropriately unless concrete measures are taken to cut through this legislative and bureaucratic tangle.

The department is developing proposals to address major deficiencies in trust fund and natural resource management. Mechanisms have to be put in place to provide services in keeping with federal responsibilities for natural resources on reserve lands. Organizational units and procedures must be built on a clear understanding of accountability, roles, and objectives, including devolution policies and guidelines. Care must also be taken to avoid duplication and make efficient use of expertise available from other government departments and the private sector.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Negotiating changes in federal-provincial agreements to allow for mineral development on reserves in Quebec, New Brunswick, and Nova Scotia, and to increase revenues accruing to bands from development under other provincial jurisdictions.

b. Collaborating with appropriate federal sectoral Ministers (Mines, Fish, Forestry) in the development of national sectoral policies and objectives which take into account development on reserves.

c. Negotiating access by Indian people on reserves to specialized programs and services available through federal sectoral departments and ERDA sub-agreements involving natural resources.

The study team further recommends to the Task Force that proposals should be brought forward for consideration by the government to:

a. Clarify accountability, roles, and objectives of the Department of Indian Affairs and Northern Development with respect to natural resources on reserve lands, including proposals for required legislative and regulatory amendments.

b. Ensure sound management and investment of revenues derived from the sale, lease, or other disposal of reserve lands and resources, preferably through an external "trust management system" acceptable to Indian people.

c. Develop an organizational structure and procedures to provide services with respect to natural resources on reserves which will be in keeping with (a) above, which will ensure an appropriate inventory of resources, and which will make efficient use of expertise from other federal departments and the private sector.

d. Provide any additional resources for b. and c. above from within existing departmental resources.

## RENEWABLE RESOURCES
### Resource, Economic, and Employment Development Branch

**DESCRIPTION**

This is a parallel, but separately managed program, to the non-renewable resources program managed by Reserves and Trusts. It was introduced in most regions in 1968; some regions have no formal programs but respond to requests on an ad hoc basis.

**BENEFICIARIES**

Support is provided, through the Resource, Economic, and Employment Development Branch, to:

- assist Indian commercial fishermen with fish nets and related equipment;
- provide trappers with more humane traps, information on humane trapping techniques, novice, and advanced trapper courses;
- outfit Indians for big game hunting and sport fishing; and
- encourage forest resource development, environmental protection and training.

**EXPENDITURES ($000's)**

Headquarters resources devoted to this program are estimated at 1.5 person-years, $45,000 in salary; and $15,000 in O&M.

Regional resources

| | 82/83 | 83/84 | 84/85 | 85/86 |
|---|---|---|---|---|
| PYs | 30.5 | 30.5 | 28.5 | 30 |
| Salaries | 1,028 | 1,106 | 1,082 | 1,125 |
| O&M | 153 | 153 | 143 | 150 |
| Program | 6,916 | 2,827 | 3,158 | - |
| Program Loans | 20 | 12 | 81 | 81 |
| **TOTAL** | 8,117 | 4,098 | 4,464 | 1,356 |

## OBSERVATIONS

This program was not specifically included in the Natural Resources inventory. It is relevant, however, to an understanding of DIAND's natural resources programs.

In the forestry sector, Indian people have identified major benefits that could accrue if enhanced technical and financial support were available on an ongoing basis. The value of the present harvest of $20 million could be apparently doubled, with better management and harvesting techniques. The inclusion of a "federal lands" component in recent Canadian Forestry Agreements with some of the provinces has improved access by Indian bands to specialized services offered under these agreements; support is however uneven and varies considerably from province to province. Core forest capability at headquarters and in some of the regions is inadequate to provide good links with CFS and other specialized programs.

Fishing is also of major cultural and economic importance. Indian communities in B.C. are faced with declining opportunities in the salmon fishery and emerging opportunities in the field of commercial aquaculture. In other parts of the country, Indian people are participants in the commercial freshwater fishery. In Manitoba alone, the fishing industry once employed 750 licensed fishermen, some 200 plant and station workers producing over 9,000,000 pounds of fish annually. The industry has deterioriated at an accelerated rate over the last few years; expertise will be required to support initiatives related to tourism, sport fishing, and a rationalized commercial fishery.

## ASSESSMENT

DIAND renewable resource activities need thorough review, policy orientation, consolidation, and better integration with other initiatives such as DRIE's Special Agricultural and Rural Development Agreement (Special ARDA).

## OPTIONS

Alternatives are included under the Indian Natural Resources and Trust Funds assessment.

## RESOURCE DEVELOPMENT IMPACTS

### OBJECTIVES

To provide financial and technical assistance to the Inuit and Indians to enable them to organize and plan for major resource developments affecting their reserves and/or adjacent areas.

### AUTHORITY

Section 91(24) of the Constitution Act, 1867; the Treaties, and the Indian Act.

### DESCRIPTION

The 1977 Third-Party Intervention Program was designed to assist Indians research, develop, and prepare interventions against third parties with respect to developments which might have a major adverse socio-economic impact. It was primarily intended to enable Indian people to intervene in public hearing processes.

Its successor, the Resource Development Impacts program (RDI), is considerably broader. Since 1984, RDI has provided for negotiations with developers as well as organization and planning to allow bands to become involved at the early stages of a development. RDI assists Indian people and the Inuit to determine the benefits and business opportunities, and participate in negotiations for the mitigation of (or compensation for) social, economic, and environmental impacts resulting from resource development initiatives.

Program delivery is by contribution agreement. The Department of Indian Affairs and Northern Development, (DIAND) headquarters, allocates funds to the regions based on annual submissions of expected requirements. Bands or their associations apply to regional or district offices. Allocation of funds is made at the regional office level with some regions using a committee of band chiefs or Indian associations to allocate available funds.

### BENEFICIARIES

Indians and the Inuit who achieve greater participation in economic development activities and have the opportunity to identify environmental and other issues.

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 |
|---|---|---|---|---|
| PYs | 4 | 4 | 8 | 8 |
| Salaries | 200 | 200 | 400 | 400 |
| Other O&M | 150 | 150 | 200 | 200 |
| Contributions | 1,144 | 5,500 | 5,200 | 5,600 |
| **TOTAL** | 1,494 | 5,850 | 5,800 | 6,200 |

Breakdown of contributions by province/territory:

| | 83/84 | 84/85 | 85/86 |
|---|---|---|---|
| Nfld | - | - | - |
| P.E.I. | - | 96 | 143 |
| N.S. | - | - | - |
| N.B. | - | - | - |
| Quebec | 148 | 681 | 420 |
| Ontario | 197 | 726 | 564 |
| Manitoba | 320 | 167 | 786 |
| Saskatchewan | 75 | 792 | 680 |
| Alberta | 153 | 700 | 890 |
| B.C. | 181 | 1,593 | 976 |
| Territories | 69 | 741 | 842 |
| **TOTAL** | 1,143 | 5,497 | 5,301 |

Expenditures for 1986/87 have not yet been allocated. Program authority funding expires March 31, 1987.

## OBSERVATIONS

Resources supporting this program are understated, as the program also involves regional personnel from economic development or planning and review units. The four additional PYs in 85/86 and 86/87 are temporary personnel -- one in each of four regions.

During 1984/85, the RDI program funded 92 projects at a total cost of $5.5 million. Funding under this program is provided only for the initial impact study. RDI is not responsible for implementation of proposals. Funding for implementation of economic development proposals is available under a variety of other programs administered by DIAND (Indian Economic Development Fund, Business Assistance), and DRIE (Native Economic Development Program).

Greater involvement by Indians in development projects increases their level of knowledge about the effects of a proposal, and may reduce the potential for confrontation and adversarial legal action. Ways in which bands are assisted include: development of community awareness of the resource development project; identification of long- and short-term job training, and business opportunities; identification of infrastructure requirements; and preparation of interventions and public hearings.

Projects are ranked on their potential for business and employment opportunities and impacts on environment and/or social conditions. Funds are allocated based on this ordering.

In some regions, funding is provided for projects that appear to be outside the scope of the RDI program. One band received funding to determine the existence of mineral deposits and another received funds to study the environmental effects of tailings from an abandoned mine site.

A number of examples exist of significant benefit to Indian bands and the Inuit as a result of proactive involvement with major resource developers. Examples are:

a. The Cold Lake Band obtained contracts with Esso Resources Ltd. for right-of-way clearing and lease pad construction, enrolled 7 band members in a pipe-fitting course, and initiated a pipeline construction training course.

b. The Grand Council Treaty #9 in Ontario negotiated with Campbell Red Lake Mines for jobs, the establishment of a Native employment coordination position with the company, and provision for transportation to and from the mine site.

c. The Peigan Band in Alberta was assisted in its review of a proposal to locate on its reserve a dam and reservoir to allow expansion of downstream irrigation systems.

There appears to be an overlap between this program and other DIAND territorial, and provincial government programs. This program has funded projects in the N.W.T. The Northern Development division of DIAND operates a similar program north of 60° which is restricted to public review participation. (Northern Participation in Public Reviews-INAC 77). The Government of the N.W.T. provides funding for impact assessment for all Territorial residents in designated impact zones. Similarly, Alberta and Saskatchewan provide Intervener funding.

## ASSESSMENT

The program serves a valid objective by involving Indians in planning for economic development and in recognizing the potential social and environmental impacts of resource development. If properly directed, it could help prevent recurrence of the Manitoba Northern Flood problems in other resource development projects. Funding criteria could be tightened and program coordination could be improved, particularly with respect to the Northern Participation in Public Reviews program. (See separate note.)

## OPTIONS

The study team recommends to the Task Force that the government should consider maintaining this program and ensuring that:

a. Projects accepted for funding; (i) are clearly responding to the program's stated objectives; (ii) are focused on long-term (i.e. structural) benefits; and (iii) have potential for significant impact on Indian reserves and Inuit communities.

b. Federal funding is not provided under this program where funding from other sources (including the band's own resources) is available.

# CANADA/ONTARIO RENEWABLE NATURAL RESOURCES DEVELOPMENT AGREEMENT

## OBJECTIVE

To assist status Indians in northern Ontario to plan and develop employment and income opportunities through effective utilization of natural resources to which they have access.

## AUTHORITY

Department of Indian Affairs and Northern Development Act.

## DESCRIPTION

On April 1, 1950, the federal and Ontario governments entered into a 10-year agreement to provide economic assistance to Indian trappers. This agreement provided funding up to $100,000 annually with costs shared equally between the two governments. The agreement was extended for two years on April 1, 1960.

On April 1, 1962, a new 10-year agreement broadened the scope of economic assistance to include development and management of other renewable resources from which Indian people derive their livelihood. Funding assistance was increased to $200,000 annually, with costs shared equally between the federal and provincial governments. This agreement was extended for two years on April 1, 1972 and for one additional year on April 1, 1974.

On April 1, 1975, a new agreement with a five-year term ending March 31, 1980 was effected. It increased funding to $400,000 annually on the same cost-sharing basis. Its primary objective was to improve the economic circumstances of Indians residing in Ontario through the development of renewable natural resources. The agreement was extended under the same terms and conditions to March 31, 1982.

The current agreement covers the period from April 1, 1982 to March 31, 1987. As in prior agreements, costs are shared equally between the federal and provincial governments.

The program is delivered entirely by the Province of Ontario through the Ministry of Natural Resources. A Resource Development Advisory Committee considers proposals submitted by Indian organizations and bands, and based on established criteria, recommends programs for funding. The Advisory Committee is appointed as follows:

a. three from Ontario;
b. two from the federal government; and
c. five from the major Indian organizations of Ontario.

Types of programs qualifying for funding involve resource development, management and harvesting activities in areas such as:

a. commercial fishing
b. forestry
c. sport fishing and hunting
d. fur trapping
e. processing and marketing of products derived from renewable natural resources
f. training in aspects of natural resource utilization and management.

## BENEFICIARIES

Indians of northern Ontario.

## EXPENDITURES ($000's)

| | **83/84** | **84/85** | **85/86** | **86/87** | **87/88** |
|---|---|---|---|---|---|
| Contributions | 250 | 250 | 250 | 250 | * |
| **TOTAL** | 250 | 250 | 250 | 250 | * |

*Current program expires March 31, 1987.

## OBSERVATIONS

This program utilizes existing technical resources and expertise of the Province of Ontario in administering, managing and carrying out specific projects.

Examples of successful projects include the following:

a. Transportation of 150 trappers per year from the James and Hudson Bay to previously vacant traplines in northcentral Ontario. Trappers also receive aerial survey, training, and marketing assistance.

b. Timber surveys and management plans in support of logging and sawmilling operations on 14 reserves in northwestern Ontario. Technical and managerial assistance pertaining to plan implementation, harvesting and hauling has also been provided.

c. Collection, tanning and transportation of moose and deer hides to supply the Indian handicraft industry.

Projects are selected based on their potential for economic success. Funding for individual projects is generally small -- between 1975 and 1982, average annual funding for specific projects ranged from $3,000 to $90,000. A study of costs and benefits for that same period determined that the annual program cost of $400,000 resulted in $5.8 million of gross revenue to Indians and 1,950 person-months of employment.

Treasury Board approval was obtained in 1982 for increased federal funding up to $350,000 per year for 50 per cent of the total cost of the program. Ontario has restricted its contribution to $250,000 per year; therefore federal funding has remained at this level.

## ASSESSMENT

This is a small program that appears to be effectively assisting northern Ontario Indians to develop economic opportunities.

## OPTIONS

The study team recommends to the Task Force that the government consider maintaining this program without change.

## MANITOBA NORTHERN FLOOD AGREEMENT

### OBJECTIVE

To compensate five Indian bands for negative effects of a major northern Manitoba hydro-electric project.

### AUTHORITY

Department of Indian Affairs and Northern Development Act.

### DESCRIPTION

In 1966, Canada agreed to participate in a major hydro development project in northern Manitoba. Four plants have been completed and plans have been announced for Limestone (1985). Discussions are under way relative to Conawapa (1993) and Wuskwatim (1985). Eventually, some 12-13 plants could be constructed under this project.

The development agreement failed to address the impact of the project on Indian reserve lands, resources, and lifestyle. Projects completed to date flooded 12,000 acres or 17 per cent of total reserve lands and affected some 6,535 status Indians on reserves and 1,025 on adjacent non-reserve lands. Future developments are expected to cause additional (as yet inadequately defined) socio-economic and environmental problems.

The Northern Flood Agreement (NFA) was signed in 1977, seven years after construction began, by the bands' Northern Flood Committee, Manitoba, Manitoba Hydro, and the Government of Canada (DIAND signing). This agreement also failed to address adequately such major issues as extent of damage, compensatory costs, and responsibilities of the various parties to the agreement.

Many of the specific obligations included under this Agreement have not been met eight years after the signing:

a. The Manitoba government has not yet fulfilled its land exchange and land use commitments. Only 149 acres out of approximately 47,000 have been transferred to the bands. Exclusive use of other land areas which would contribute to the economic well-being of the bands was also promised. About 4,000,000 acres have been selected by the bands but no five-year permits have been approved by the province.

b. Indian participation in roughly 16,200 person-years of Manitoba Hydro construction has been minimal.

c. DIAND's assurance of continued, undiminished levels of service have not been met. Internal DIAND reports indicate that from 1977-83, NFA bands received $10,700 per capita, while other Manitoba bands received $26,100 per capita in benefits. Implementation of other specific commitments under the NFA has also been delayed, in part because land issues have not yet been settled. These include: installation of potable water, and sewage systems, environmental and health monitoring, communities-based planning, fishing and trapping compensation and various remedial/mitigation measures.

Recent developments include:

a. An attempt by Manitoba and Manitoba Hydro in 1983 to negotiate a settlement of $42 million plus, on condition that the bands give up rights to file claims under certain NFA clauses. This offer was rejected by the bands. The Cross Lake Band later requested and received a separate settlement offer of about $12 million cash and is now preparing a counter-proposal.

b. In July 1984, the federal government announced its intention to proceed with a five-year program aimed at fulfilling Canada's specific legal obligations under the NFA. Accomplishments to date include: environmental monitoring, preparation of a Treasury Board submission for sewer and water installations, provision of core funding to the Northern Flood Committee, and finalization of an employment and training agreement for the Limestone project.

## BENEFICIARIES

Development beneficiaries include Manitoba Hydro, consumers, and construction workers.

Compensation benefits accrue to approximately 7,500 status Indians of the Cross Lake, Nelson House, Norway House, Split Lake, and York Factory Bands.

## EXPENDITURES ($000's)

Expenditures for specific obligations under the agreement (e.g. potable water) from 1977 through 1984:

| Department | 77/82 | 82/83 | 83/84 | Total |
|---|---|---|---|---|
| DIAND | 4,084 | 1,005 | 2,022 | 7,111 |
| NHW | 163 | 113 | 114 | 390 |
| DOE | 61 | 107 | 082 | 251 |
| DFO | - | - | 015 | 015 |
| DRIE | - | - | - | - |
| CEIC | - | - | - | - |
| **TOTAL** | 4,308 | 1,225 | 2,233 | 7,767 |

The Agreement has no "sunset clause" other than the end of the project. The potential total costs for all parties over the life of the project are estimated by DIAND as follows:

| | All NFA parties ($m) | Canada's share ($m) |
|---|---|---|
| Specific compensation programs | 160-250 | 40-70 |
| General obligation | 100-200 | 0-70 |
| Damages/default charges | 80-100 | 10-20 |
| **TOTAL** | 340-550 | 50-160 |

## OBSERVATIONS

Energy production has increased as a result of this project from 2 billion megawatts in 1971 to 4.1 billion in 1984 and is expected to increase to 6 billion by 1992.

The three new projects are expected to cost $7 billion and generate some 31,620 person-years of direct and indirect employment.

DIAND has the responsibility to ensure that Canada's obligations under the Indian Act are met and that it is assisting in the environmental protection of Indian reserves. Other departments have tended to view this project as DIAND's problem. These departments should be more directly involved in solving issues relating to environmental, employment, and health effects.

Future construction under this long-term Agreement is likely to cause further problems. The environmental and community impact of the proposed Wuskwatim, and Conawapa plants has not been adequately assessed. Compensation costs and responsibilities also need to be sorted out.

## ASSESSMENT

Manitoba Northern Flood is a good example of what not to do in future resource development projects. The Agreement was negotiated too late, did not identify or deal with major issues and costs, and failed to establish appropriate responsibilities and implementation mechanisms. It also led to a long "waiting period" of eight years for the affected bands, during which time they received less program assistance than other unaffected bands. Future construction may also present serious problems, particularly in the case of the proposed Canawapa plant. Impacts, compensation costs and responsibilities will have to be settled before construction begins.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. The feasibility and cost of achieving a comprehensive settlement with Indian bands or, if a comprehensive settlement is not feasible in the short term, rapid implementation of specific federal commitments under the agreement.

b. Means to accelerate settlement of land issues by Manitoba with respect to lands previously flooded.

c. Means and requirements to delay or halt future construction pending identification of impact, costs, and responsibilities.

d. Definition of roles and responsibilities, including funding responsibilities, of other federal departments.

e. Adequacy of current federal programs to prevent occurrence of similar problems with future resource development projects.

## FOREST FIRE AGREEMENTS

### OBJECTIVE

Meet fire suppression, prevention, and protection requirements on reserve lands.

### AUTHORITY

Indian Act, Section 57; Indian Timber Regulations.

### DESCRIPTION

Forest fire control services are provided on reserves by the provinces or by la Société de la Conservation (Quebec) through cost recovery agreements with the Department of Indian Affairs and Northern Development (DIAND).

### BENEFICIARIES

Indian bands living on reserves.

### EXPENDITURES ($000's)

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| Other O&M | 868 | 900 | 40 | 40 | 40 |
| Grants & Contributions | - | - | 860 | 860 | 860 |
| **TOTAL** | 868 | 900 | 900 | 900 | 900 |

### OBSERVATIONS

The Minister of DIAND, pursuant to the Indian Act, exercises trust authority on behalf of the Crown to administer reserve lands and the natural resources found thereon. This involves a total area of five million hectares, of which one million hectares are, according to the Canadian Forestry Service (CFS), forest lands within commercially accessible regions.

Throughout Canada, forest areas destroyed by fire each year exceed the area harvested. These fires periodically expand to cover large areas in one or more provinces, making it inefficient for DIAND to do its own fire-fighting over scattered parcels of land. In this context, DIAND's contractual arrangements with the provinces or, in Quebec, la Société de la Conservation, are both effective and cost-efficient.

## ASSESSMENT

DIAND's current contractual arrangements with the provinces and la Société de la Conservation are a cost-effective way of dealing with fires on reserves. These arrangements could be included in the review of forest management discussed under Reserves and Trusts.

## OPTIONS

The study team recommends to the Task Force that the government consider maintaining current contractual arrangements with the provinces and the private sector for forest fire control services, and including this program in the development of resource management proposals as outlined in the Indian Natural Resources and Trust Funds assessment.

## MINERALS AND METALS OVERVIEW

### The Industry

For purposes of this study the minerals and metals sector includes all activities associated with the exploration, mining, milling and concentration, smelting and refining of non-fuel minerals and metals in Canada.

This minerals and metals sector competes in an international market which is becoming increasingly more competitive as new producers from Third World countries create new sources of supply. Recently, it has suffered through a period of oversupply and drastically reduced prices for the majority of its products. The industry has taken significant action to reduce costs and increase productivity in an effort to remain competitive at these lower world prices.

Canada is the third largest producer of minerals and metals in the world (behind the U.S.A. and the U.S.S.R.) and the largest exporter of minerals and metals. Canada produces approximately 60 mineral commodities and is ranked among the first six countries in world production of nickel, zinc, asbestos, potash, molybdenum, sulphur, gypsum, silver, platinum metal, gold, copper, lead, aluminum and iron ore.

In 1983, this sector accounted for approximately $21 billion in output and employed directly more than 160,000 persons.

Downstream activities such as shaping and fabricating of minerals and metals accounts for an additional $20 billion in output and 235,000 persons in employment. (Statistical information regarding the sector is presented in Appendix I).

The value of exports in 1983 exceeded imports by more than $5.9 billion with the majority of exports going to the United States (60%), the European Economic Community (9%) and Japan (8%). The sector is a major net earner of foreign exchange for the economy.

It is this wealth and job creation and the favourable trade performance of the industry that gives the federal government both reason and purpose for supporting it.

## Federal Programs

The federal government provides services under the general constitutional authority for the regulation of trade and commerce, the collection of statistics and the commitment to address regional imbalances. In addition, the federal government provides national research and development capabilities that could not be economically duplicated by an individual enterprise or region. Consequently, although most mineral resources are owned and managed by the provinces, the federal government provides a wide spectrum of services including geological mapping, research and development, regional coordination and assistance through mineral development agreements with the provinces, and support for international trade activities.

The Department of Energy, Mines and Resources (EMR) plays a leading role in delivering federal government services. Specifically:

a. The Geological Survey of Canada conducts geoscientific research and related activities and produces geological maps. This service supports continued mineral exploration and development in Canada.

b. CANMET conducts medium-to-long term research related to mining, mineral processing and metals, as well as health, safety and environmental research.

c. The Mineral Policy Sector (MPS) develops government policies related to minerals and metals, and administers Mineral Development Agreements (MDAs) with the provinces.

Other federal departments involved in activities affecting this sector are:

a. The Department of Regional Industrial Expansion (DRIE) which encourages regional development through industrial assistance in support of smelting, refining and other downstream activities.

b. External Affairs (EA) which handles negotiations and provides services in respect of international trade.

c. The Department of Indian Affairs and Northern Development (DIAND) which advises on, and implements measures affecting minerals on Indian lands and in the territories.

## The Need for a National Mineral Policy

The study team observed that there is no national policy framework to guide the operations of EMR, DRIE, Finance, the Canadian International Development Agency (CIDA) and External Affairs (EA). As a result, the sectoral and trade strategies being pursued by these departments in minerals and metals are not always focused on national needs and can, at times, be counterproductive. For example, CIDA has provided support for foreign mineral development projects that compete with Canadian producers. The objectives of individual organizations within EMR such as, CANMET and the Geological Survey of Canada (GSC)also lack focus. The MDAs negotiated by the federal government with provinces have no central policy framework or guiding objectives.

The study team believes that government resources in programs affecting this sector could be more effectively employed if all programs were directed towards clearly-stated national objectives. The purpose of a national mineral policy would be to identify such objectives.

A national mineral policy, as visualized by the study team, would contain two essential elements:

a. Establishment of national objectives or goals to provide focus in the development of programs and activities. The objectives should be concise, few in number and capable of remaining constant over a period of years. The Forest Sector Strategy for Canada is an example of such a sectoral statement. Objectives should emphasize the importance to Canada of export trade and international markets.

b. A clear delineation of the roles and responsibilities of each participant in the minerals and metals sector -- industry, labour and the federal and provincial governments. Clearly the industry has responsibility for the creation of wealth in this sector. Government responsibilities would be defined based on constitutional authority and the ability to provide the necessary support and stability to the industry.

The mineral policy should be supported by a national mineral products strategy. Such a document would evaluate significant minerals available in Canada, in the context of international market, economic and technological information. It would assess the long-term worldwide outlook for product demand, factors that may shift demand to or from the product, and prospects for alternative uses. It would identify mineral products that have the potential to make a substantial contribution to Canadian wealth. Such an evaluation would form the basis for strategies to direct limited government resources towards activities supporting those mineral products that will make a significant contribution to Canada's economy.

**Rationalization**

There appears to be some duplication in the activities of EMR, DRIE and EA, related to market/product knowledge and strategies. In addition, some observers have suggested that the MPS of EMR is overstaffed and is duplicating activities that are being performed by other departments and private sector consultants. In view of time constraints, the study team did not attempt to review specific activities or manpower requirements of each department. The delineation of the federal government's role and responsibilities as part of the national mineral policy will provide a basis for rationalizing the responsibilities and staff requirements of the various federal departments.

In reviewing programs affecting this sector, the study team was struck by the vagueness and generality of many program objectives. With such a lack of precision in defining a program's purpose, it is perhaps not surprising that the programs attempt to become all things to all people. The objective of the MPS of EMR can be taken as an example. This objective states, in part:

> "to assess the economic, social, fiscal, corporate, regional and environmental impacts of alternative policies and strategies".

We submit that such an objective, which is almost totally open-ended, does not provide any bench mark against which performance can be measured, and is a justification for continued growth and expansion of the department's activities. By comparison, the corporate objective of Otis Elevator -- "To move people rapidly over short distances both horizontally and vertically" -- is a model of clarity and precision. For instance, the objective "to assist the mining industry to mine and produce minerals and metals at the lowest possible cost for expanding world markets and for the expanding manufacturing sector of Canada" would be a more focused objective.

### Industry Involvement

Most programs reviewed by the study team were developed to support the minerals and metals sector. As programs grow, it seems they often lose sight of their original purpose. To maintain this focus, it is important that the industry play a more active role in the development of priorities and selection of projects in such programs as geological surveys, research and development, and federal/provincial mineral development agreements. Such a process of cooperation and coordination will ensure that federal programs respond to the specific requirements of the sector.

## ASSESSMENT

The alternatives regarding programs in the minerals and metals sector revolve around the need for a national minerals policy which will clearly define the role of federal and provincial governments, and identify national objectives. In addition, there is a need for a mineral product strategy to assist in setting priorities and allocating government resources to appropriate segments of the industry.

Once federal responsibilities are defined and allocated among departments, organizational and manpower requirements can be established. Activities that do not directly support clearly defined and acceptable national objectives should be terminated. This rationalization should result in overall manpower reductions.

Procedures must be developed to ensure adequate and timely involvement of the mining industry in setting priorities and selecting projects for subsequent mineral development agreements.

In order to improve the direction of research and the communication of results, there should be greater interchange of personnel between CANMET, other federal departments, universities and industry, and the use of jointly funded and cooperative research projects should be increased.

The study team believes that the process outlined above will result in a much more effective utilization of limited government resources for the benefit of the minerals and metals sector and the Canadian economy.

The study team concluded that the development of a national mining policy and programs can best be coordinated through the federal Minister of Mines. To do so, he will require an appropriate organizational structure and staff. In this context, the study team felt that the Minister of Mines should have an Associate Deputy Minister reporting directly to him rather than to the Deputy Minister of EMR. This revised structure should not preclude provision of common, administrative services through the Deputy Minister of EMR. A similar structure has been recommended for the Forestry sector.

## MINERALS AND METALS ECONOMIC DIMENSIONS - 1983

| DESCRIPTION | Number of Firms * | Value of Production ($ billions) | Employment** | Balance of Trade of Goods ($ millions) |
|---|---|---|---|---|
| **STAGE I** | | | | |
| Primary Mineral Production | | | | |
| Metal Mines | | 7.4 | 52,500 | |
| Non-Metal Mines | | 1.9 | 14,100 | |
| Structural Materials | | 1.7 | 4,000 | |
| Services Incidental to mining | | | 14,400 | |
| **Total** | **4,814** | **11.0** | **85,000** | **+2,860.9** |
| **STAGE II** | | | | |
| Primary Metal Production | | | | |
| Smelting & Refining | | 4.1 | 30,600 | |
| Iron & Steel Mills | | 6.3 | 46,700 | |
| **Total** | 355 | **10.4** | **77,300** | **+3,977.4** |
| **STAGE III** | | | | |
| Metal & Non-Metal Semi-fabricating | | | | |
| Metal Rolling, Casting & Extruding | | 2.8 | 27,100 | |
| Wire & Wire Products | | 2.5 | 17,400 | |
| Non-metalic Min. Products | | 4.7 | 48,700 | |
| **Total** | **1,788** | **10.0** | **93,200** | **-15.4** |

| | | | | |
|---|---|---|---|---|
| **STAGE IV** | | | | |
| Metal Fabricating **Total** | 5,906 | 9.0 | 142,500 | -498.6 |
| **TOTAL** | **12,863** | **40.40** | **398,000** | **+6,324.3** |

* 1981 Calura Report (April 1984)

** Energy, Mines and Resources, Statistics Canada 1983P

# THE MINERAL POLICY SECTOR OF EMR

## OBJECTIVES

To establish policies and strategies to ensure that the minerals and metals sector makes a maximum contribution to the economic well-being of Canada, and that effective use of these resources is encouraged; to advise on the implications of international mineral development; and to assess the economic, social, fiscal, corporate, regional and environmental impacts of alternative policies and strategies.

## AUTHORITY

Department of Energy, Mines and Resources Act and the Resources and Technical Surveys Act.

## DESCRIPTION

The Constitution Act 1982 confirms provincial ownership of mineral resources. There is a coordinating role in the mining and minerals sectors that has been assigned to the federal government and delegated to EMR, which is explained in the Resources and Technical Surveys Act and the Government Organization Act of 1983.

The Minister of Energy, Mines and Resources (EMR) is responsible for coordinating, promoting and recommending national policies concerning energy, mines, minerals and other non-renewable resources, and for the formulation of plans to conserve, develop and use these resources. In addition, the Minister is authorized to establish scientific laboratories, to conduct research and technical surveys related to the assessment of mineral and energy resources, to prepare and publish maps, and to conduct scientific and economic research related to the mining and metallurgical industries of Canada. The department also exercises a policy and advisory role with other governmental departments and the industry in domestic and international mineral supply and demand matters.

The department develops perspectives on international markets for minerals and metals and their products and technologies. It also develops, and where appropriate, leads missions to other nations, for market development or education purposes. The department develops, negotiates, manages and provides technical advice on federal-provincial mineral development agreements, and it plays a general advisory role with the mining and minerals industries through its counsel and publications. EMR is the source of "Canada's National Mineral Statistics" used and published by Statistics Canada, and is principal adviser to Revenue Canada (Taxation and Customs and Excise) on mineral matters.

## BENEFICIARIES

Other federal government departments, provincial governments, companies with mineral interests and university economics research functions.

## EXPENDITURES ($000's)

This activity accounts for approximately 4% of EMR's total program expenditures and approximately 5% of the total person-years.

| | 83/84 | | 84/85 | | 85/86 | |
|---|---|---|---|---|---|---|
| | $ | PY | $ | PY | $ | PY |
| Policy and Program Development | 2,867 | 7 | 1,782 | 36 | 1,826 | 34 |
| Minerals and Metals Strategy | 3,471 | 41 | 5,646 | 43 | 6,839 | 54 |
| Resource Strategy and Information | 2,073 | 54 | 2,364 | 44 | 2,465 | 41 |
| Economic and Financial Policy Analysis | 916 | 17 | 1,148 | 16 | 1,236 | 16 |
| Activity Management and Support | 771 | 16 | 1,183 | 15 | 1,496 | 20 |
| **TOTAL** | 10,098 | 135 | 12,123 | 154 | 13,862 | 165 |

Of the total expenditures, 58% is for personnel costs and 42% for all other operating expenditures items.

## OBSERVATIONS

There is no national mineral policy that clearly defines the objectives and direction of the federal government activities in relation to industry and the provinces.

The minerals and metals industry is export-oriented and contributes significantly to Canada's balance of trade. Businesses that compete in a world market require information regarding worldwide supply and demand, activities of competing nations and other matters. The federal government, with its network of sector departments, embassies and trade commissioners, is in a position to support the industry's information needs.

A substantial proportion of MP effort is devoted to ore reserves, regional development and employment. A stronger reorientation towards international markets, competitive pressures and other external factors affecting the industry is required, as for example participation in the United Nations sponsored Lead-Zinc Study Group. This could provide a sound basis for the development of mineral strategies and government priorities.

The roles and responsibilities of EMR, External Affairs, and Regional Industrial Expansion for activities related to marketing and international trade need to be clearly defined. EMR should provide "one-stop" marketing and technological services to industry. The remaining trade functions now scattered across EMR, DRIE, and External Affairs, should also be rationalized. External Affairs is preparing a paper for presentation to the Task Force, regarding federal management of international trade programs, and is expected to develop a proposal to address this issue.

There is duplication of mineral economics and commodity studies. EMR, DRIE, Finance, and some of the provinces duplicate work. The responsibilities of each federal department do not appear to be clearly defined with respect to minerals and metals. There are generic economic studies done by the Energy Sector and MPS that may be common to both sectors and could be combined to avoid duplication.

The quality of many of the studies published by MPS is not equivalent to the professional standards set by commercial commodity and economic research firms. Several mining companies reported that they do not use the department's work in their analysis, but rather supplement their own work with purchased work done by consultants such as CRU, Chase Econometrics, etc.

The Mineral Policy Sector (MPS) has grown 20% in personnel complement since 1983/84 (135 to 165 PYs). The addition of 30 people is related to the Federal/Provincial Mineral Development Agreements.

The statistical collection, auditing of the statistics and liaison with the provinces, involves 18 person-years out of 41 in the Resource Strategy and Information Branch. Industry has questioned the need for so many person-years in this function.

There have been suggestions from several people with intimate knowledge of the MPS that this sector could be reduced by about 50 person-years, without affecting the output of needed work.

## ASSESSMENT

A national policy for the minerals and metals sector in Canada is required. The role and responsibility of the federal government, and other participants in the sector, must be clearly established and the participants must agree on objectives and strategies to serve as a guide for coordinating their future efforts.

The MPS appears to be overstaffed in the opinion of people who know the operation and there appears to be duplication of work and effort within EMR policy sectors and other federal departments such as EA and DRIE.

The MPS commodity studies are of limited value to the mining/metallurgical industry in Canada because they do not meet professional standards required by the industry.

## OPTIONS

The study team recommends to the Task Force that the government consider, in cooperation with the provinces, the territories and the private sector, developing:

a. A national policy for the minerals and metals sector, clearly defining the roles and responsibilities of each participant and identifying national objectives.

b. A national mineral products strategy to guide the allocation of government resources within the minerals and metals sector.

The study team further recommends to the Task Force that proposals should be developed, in consultation with the minerals and metals industry:

a. To obtain, on a continuing basis, relevant international information required by the industry about its markets.

b. To make this information available to the private sector and provincial governments on a timely basis.

c. To utilize this information in the development of federal government strategies and programs affecting the mineral industry.

The study team recommends, in addition, that a policy should be developed for consideration by the government to purchase the best commercial commodity studies available, and produce internal commodity studies only where the department has unique access to information.

In addition, the study team recommends that the government consider a plan to:

a. Allocate federal government responsibilities, as identified in the national policy referred to above, among the three departments without overlap and duplication. This allocation should build upon the core strengths of the Mineral Policy Sector to develop a more encompassing sectoral responsibility for mining and metals.

b. Identify responsibility, organizational and manpower requirements to carry out the activities referred to above.

c. Achieve an overall reduction in resources related to these activities of 50 PYs (as compared to existing levels).

## CANADA CENTRE FOR MINERAL AND ENERGY TECHNOLOGY (CANMET)

### OBJECTIVE

To enhance the role and contribution of minerals and energy to the Canadian economy by means of mission-oriented research and development in mining, mineral processing and utilization of metals, industrial minerals and fuels, which:

a. provides information to the Minister for making policies related to non-renewable resources;

b. serves government social objectives for health, safety and the environment; and

c. is supportive to R&D performed by industry in order to improve the economic performance and productivity of industry.

### AUTHORITY

Department of Energy, Mines and Resources Act; Resources and Technical Surveys Act; Canada Explosives Act.

### DESCRIPTION

CANMET was established in 1907 to provide scientific and technological support to the Canadian mining and metallurgical industries, complementing the activities of the Geological Survey of Canada. With the development of national facilities and national expertise, CANMET has continued to provide this service in respect of mineral resources most of which are owned by the provinces.

During the Second World War, work was extended into metals processing and quality control to meet the surge of manufacturing activity that occurred. With the establishment of responsibility for mineral and energy policies in the Department of Energy, Mines and Resources (EMR) and increasing government interest in the quality of life from the viewpoints of both health and safety in the workplace and environmental control, CANMET has extended its R&D efforts in these areas.

CANMET's three areas of responsibility, and the resources devoted to each, are as follows:

a. **Policy R&D (10%)** -- standards, certification, resource assessments and R&D in support of government policy making and regulation.

b. **Protection technology (33%)** -- mine health and safety, treatment of water and effluents, quality and integrity of structures.

c. **Productivity technology (over 50%)** -- provision of national facilities, development of mineral extraction processes and advanced productivity technology.

In 1980, total R&D spending in the minerals and metals industry in Canada was estimated to be $220 million, shared as follows:

a. Industry - $145 million (66%);

b. Federal government - $47 million (21%);

c. Provincial governments and other - $28 million (13%).

CANMET performed three-quarters of the federal R&D, with the balance being contracted out by CANMET and other departments, to industry and universities.

CANMET's R&D activities for 1985/86 are subdivided as follows:

| | **PY** | **($ Millions)** |
|---|---|---|
| Mining | 71 | 7.7 |
| Mineral Processing | 189 | 18.3 |
| Metals and Materials | 141 | 10.2 |
| Coal Mining and Preparation | 59 | 6.2 |
| Fuels Technology | 178 | 27.1 |
| Technology Information Services | 36 | 2.1 |
| Technical Services | 61 | 2.6 |
| Activity Management/Support | 55 | 4.1 |
| | 789 | 78.3 |
| Explosives Testing & Research | 14 | .7 |
| | 803 | 79.0 |

The following is a brief description of each sub-activity, based on current programs, with an indication of the percentage of expenditures devoted to each major area.

Mining ($7.7M): Research is conducted into ground control problems and rock mechanics, particularly in northern Ontario at the Elliot Lake Mining Research Laboratory (15%); review and evaluation of innovative mining methods and equipment (10%); research affecting health, safety and environmental concerns in the mine (60%); calculation of mineral reserves; equipment certification.

Mineral Processing ($18.3M): Projects are directed towards productivity improvements - efficient extraction of metal from complex concentrates or low grade ores, computerized techniques for increasing plant efficiencies, byproduct recovery (45%); environmental aspects including pollution from mineral wastes (20%); research regarding properties of materials and their potential uses (20%); mineral evaluation; standards and specifications.

Metals and Materials ($10.2M): Research into control and prevention of corrosion (15%); properties of materials (15%); development of casting processes (15%) and welding processes (10%); materials failure analysis (12%); certification and structural integrity (10%); metalworking technology and advanced instrumentation.

Coal Mining and Preparation ($6.2M): Projects are directed towards improvement of coal recovery (35%) and reduction of sulphur emissions (15%); health and safety aspects (25%) particularly in Cape Breton (Sydney Lab); encouraging adoption of new mining technology (15%).

Fuels Technology ($27.1M): Research in this area is heavily supported by the Energy Research and Development Program. Projects are directed toward heavy oil recovery, upgrading, etc., and alternative fuels technology such as coal gasification, liquifaction, etc.

Technology Information Services ($2.1M): provides a national library, technical literature documentation and publication service.

Technical Services ($2.6M): provides engineering, technical and operational services to support CANMET activities.

Activity Management/Support ($4.1M): resources required for the management and support of CANMET activities.

Explosives Testing and Research ($.7M): testing and certification of explosives manufactured in or imported into Canada, and associated R&D.

Coordination of CANMET's activities with those of industry, provinces, and universities is carried out both formally and informally. Formally, the National Advisory Committee on Mining and Metallurgical Research (NACMMR) reviews project proposals and makes recommendations to CANMET management. The NACMMR committee (and five subcommittees) are composed of representatives from industry, universities and provincial research institutes. Informally, discussions between CANMET and other researchers are ongoing.

## BENEFICIARIES

Businesses in the minerals and metals industry, and their employees, federal and provincial government departments and agencies who use the results or the resources in carrying out their mandate (e.g. Environment, DRIE, Health and Welfare).

## EXPENDITURES ($000's)

| **85/86** | **PYs** | **Salaries Benefits** | **Other O&M** | **Capital** | **Grants& Conts.** | **Total** |
|---|---|---|---|---|---|---|
| Minerals | 524 | 22,210 | 9,443 | 4,175 | -- | 35,828 |
| Coal Mining Prep & Uranium | 57 | 2,424 | 3,198 | 330 | -- | 5,952 |
| Energy | 208 | 9,393 | 21,494 | 5,590 | 55 | 36,532 |
| **TOTAL** | 789 | 34,027 | 34,135 | 10,095 | 55 | 78,312 |

Approximately 54% of total funding is provided from special projects such as the Energy Research and Development Program ($31M), Mineral Development Agreements ($4M) and the National Uranium Tailings Program ($3M).

## OBSERVATIONS

CANMET's role in mining and mineral research was established many years ago, when provincial capacity to perform such activities was very limited. As a result, CANMET established national facilities and developed national expertise. CANMET serves a necessary and useful purpose in the broad spectrum of research and development in this sector in Canada. This role is appropriate given the national significance of the minerals and metals sector to export earnings and balance of trade.

CANMET's research tends to focus on projects with medium-to-long term payoff, as compared to the short-term, product or productivity-oriented research performed by industry. Also, CANMET focuses on issues of general application to the industry or the country, and on projects where the use of a national facility can result in economies of scale.

The minerals and metals industry is made up of a relatively small number of large, integrated producers and a large number of small, specialized businesses, particularly in the mineral processing and metal fabricating industries. While the large producers can, and do, conduct their own research activities, the smaller organizations cannot afford their own facilities and therefore rely to a greater extent on a facility such as CANMET.

Through most of this century, world demand for metallic minerals was strong. Canada had the resources and the technology to supply this market and to be competitive. Significant benefits accrued from research and development activities directed at almost any segment of the industry.

During the last two decades, the scenario has changed. World supply of metallic minerals has increased, with competition from countries with high-grade ores and relatively lower costs of production. Demand for certain minerals has declined significantly with correspondingly dramatic decreases in metal prices. Canadian industry has reacted with substantial cost-cutting and efficiency-enhancing measures. Some segments of the industry may find they cannot remain internationally competitive in traditional product lines.

In order to fulfill its mandate to assist in the improvement of economic performance and productivity of industry, and to maximize the return on its resources, CANMET must address the following issues:

a. directing R&D efforts in an industry that is subject to extreme international competition;

b. communicating the results of R&D to ensure maximum utilization of these benefits.

There is a perception that CANMET is directed by science rather than by the minerals and metals industry. Projects are originated by individual scientists and programs are assembled through coordination of individual projects. The relevance to industry of some projects is not always clear.

NACMMR is not considered to be an effective vehicle for providing industry direction to CANMET's research efforts - the committee, in many cases, comments on projects after they have begun and is not sufficiently involved in the selection or development of projects. NACMMR's role is clearly limited to influencing CANMET's program, as compared to providing direction.

There is no clear commodity strategy within EMR to provide direction in setting priorities. CANMET's research could be better focused if priorities were dictated by a national mineral policy with clearly identified commodity strategies.

A relatively small percentage of CANMET's resources are directly involved in research relating to mining and mineral technology and productivity. A significant portion of CANMET's effort in mining, mineral processing and coal is directed towards health, safety and environmental concerns. While no one will dispute the ongoing need for such activities, their priority may be questioned at a time when the industry is under severe pressure and productivity improvement is so critical.

Communication between CANMET and industry researchers, particularly in research labs or institutions, appears to be good. However, communication with operating managers and other potential beneficiaries in industry could be improved. Two-way communication at this level is seen as an important way of making CANMET's research more relevant and useful to industry.

All parties would benefit by greater interchange of personnel between CANMET, other federal departments, universities and industry. Research would not be done in isolation as researchers would be more aware of the needs of industry and industry would be more aware of government capabilities. Communication of needs and of results could be greatly improved.

Similarly, joint funding and cooperative research projects were suggested as vehicles for improving the direction of research and communicating results. The study team noted that CANMET is in the process of following an earlier recommendation of the Ministerial Task Force to increase cost recovery.

**ASSESSMENT**

CANMET plays an important role in the broad spectrum of research and development in the minerals and metals sector by providing national facilities and expertise, an industry-wide perspective and the ability to perform research seeking longer-term benefits.

> CANMET's objectives need to be more clearly focused. Criticism arises from the lack of a coherent policy framework for minerals and metals within EMR. Perhaps as a consequence, CANMET attempts to be "all things to all people".
>
> CANMET's linkages and communications with some parts of the industry are weak.

**OPTIONS**

The study team recommends to the Task Force that the government consider:

a. Developing a mineral products strategy identifying those minerals and metals that can generate significant value for Canada in the future, considering worldwide supply and demand for such resources.

b. Directing CANMET to focus its research and development activities on those minerals identified in a. above and terminating activities that do not support those objectives.

c. Establishing an operating management committee to direct R&D activities; this committee would be composed of a reasonable balance of government and private sector members.

d. Reducing the federal funding of CANMET by 25% with these funds being replaced by direct support from industry for the fiscal year 87/88.

e. Reducing the A-Base complement of research staff by 10% and replacing it by secondment from industry and universities by 1988.

Following implementation of the above recommendations, the government, in consultation with the mineral and metal industry, should determine the implications and feasibility of converting CANMET to an independent research organization with equal funding and management by both industry and government.

# MINERAL DEVELOPMENT AGREEMENTS
## (ERDA sub-Agreements)

### OBJECTIVES

To strengthen and diversify the mineral industry sector of the provincial economy.

### AUTHORITY

The Resources and Technical Surveys Act, Chapter R-7.

### DESCRIPTION

Economic and Regional Development Agreements (ERDAs) are the primary instruments used by the federal government to coordinate federal-provincial regional development initiatives. ERDAs are developed in conjunction with the provincial governments and form the framework for subsidiary agreements designed to meet specific, sectoral needs in each province. These sub-agreements cover a number of areas: mineral development, forestry, fisheries, tourism, etc.

By early 1984-85, mineral development agreements (MDAs) were in place with Newfoundland, Nova Scotia, New Brunswick, Manitoba, and Saskatchewan. Except for a $3.3 million contribution to a Newfoundland geological mapping program, these MDAs are characterized by federal delivery of federal programs and provincial delivery of provincial programs (parallel delivery). All agreements include major geoscientific programs delivered by the Geological Survey of Canada (GSC); mining and processing research delivered by CANMET; market feasibility studies and public information programs delivered by the Department of Energy, Mines and Resources (EMR).

In 1985/86, new MDAs were signed with Ontario, Quebec, and British Columbia. These MDAs reflect major changes in policy with respect to both delivery and scope of programs. Geoscience is still a major component. However, these new MDAs include projects beyond the scope of earlier agreements. The MDA with Ontario includes infrastructure provisions as well as federal contributions to provincially delivered programs. The Quebec MDA, which will be totally delivered by the province,includes an asbestos R&D program and a large program of support for infrastructure. The B.C. MDA will be provincially delivered (with the exception of a geophysical survey component to be delivered by the GSC) and will include programs for direct assistance for mining development.

Since 1981, coordination of the MDAs has been handled by the Regional Mineral Development Division of EMR's Mineral Policy Sector.

## BENEFICIARIES

Provincial and federal governments because of more effective/efficient coordination of programs, and private sector companies involved in mineral resource development.

## EXPENDITURES

Over the five-year term of the eight agreements that have been signed, the total federal government cost is $134.5 million. Of this amount, $61.3 million represents federal contributions to provincially-delivered programs, and $73.2 million represents the cost of federally-delivered programs. Expenditure details are provided in Appendix 1.

## OBSERVATIONS

Most mineral resources in Canada are owned by the provinces. The federal government has however, historically played a leading role in geoscience and in mineral research and development. In view of the federal responsibility for trade and the significant contribution of the minerals and metals sector to export trade, the federal government has a vested interest in encouraging and coordinating mineral development activities.

The ERDA approach is potentially one of the most powerful and flexible instruments available for the coordinated planning and delivery of programs where the senior levels of government share interest and responsibility. This potential is not being achieved because of the lack of clear focus or consensus as to what these ERDAs are to accomplish. The 1985 Development

Ministers' Principles cover a broad range of conflicting objectives dealing with both "sustainable economic activities" and the need to address persistent "regional disparities". Since almost any project can be said to fit one of these objectives, it is all too easy for the various sectoral sub-agreements to degenerate into a collection of unrelated, unfocused projects.

While the broader ERDA framework could continue to provide for a wide range of objectives, these conflicting objectives should be carefully distinguished in setting up future sectoral sub-agreements. These sub-agreements (mining, forestry, fisheries, etc.,) should be based on a national policy for each sector and should focus activities on economically viable projects and on the coordination of ongoing federal-provincial A-Base activities. A comparatively broader scope or increased federal funding could be provided in the case of disadvantaged regions; this supplementary assistance should be directed towards realistic, economic opportunities.

The level of federal funding for the MDAs is largely determined by provincial priorities as applied to all sectors for ERDA funding. The study team therefore focused its review on the effectiveness of government spending rather than on the level of spending.

Mineral development agreements are seen by industry and governments as an effective means of coordinating intergovernmental efforts in an area of provincial jurisdiction. Projects selected for funding may not, however, provide the greatest potential benefit to the minerals industry as a result of:

a. The lack of a mineral policy framework within which national and regional objectives can be set. MDAs lack the focus of forestry development agreements where a federal-provincial consensus on sectoral policy objectives has been reached.

b. The lack of adequate industry input into the selection of projects, priorities and funding. A number of industry people felt that MDAs responded more to governments' perceptions and bureaucratic priorities than to the industry's needs.

## ASSESSMENT

MDAs, like other ERDA sub-agreements, are a potentially powerful and flexible instrument for the coordination of federal-provincial activities. They can however, easily degenerate into a grab bag of items reflecting a variety of conflicting objectives. What is clearly needed is a national policy framework to direct these agreements towards economic (as contrasted with social and income distribution) potential in the industry, and a mechanism to provide for appropriate industry involvement in the setting of priorities and selection of projects.

## OPTIONS

The study team recommends to the Task Force that the government consider:

a. Developing a framework for mineral development agreements, using the national policy for minerals and metals (see recommendation on Mineral Policy Sector of EMR), to ensure that MDA funds are allocated, in accordance with national objectives, towards minerals and metals that are capable of generating significant value for Canada.

b. Establishing procedures to ensure adequate and timely involvement of the mining industry in setting priorities and selecting projects for subsequent mineral development agreements.

APPENDIX 1

## MINERAL DEVELOPMENT AGREEMENTS

| | Funding ($000) | | | | | Federal Programs* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Federal | Provincial | Total | Ratio | Federal Contribution | Geoscience | Technology | Economic Studies | Public Info. Adm. | Total | Termination date |
| Nfld. | 15,400 | 6,600 | 22,000 | 70:30 | 3,300 | 7,950 | 1,500 | 1,250 | 1,400 | 12,100 | 31-3-89 |
| N.S. | 16,125 | 10,820 | 26,945 | 64:40 | ** | 8,955 | 3,275 | 2,195 | 1,700 | 16,125 | 31-3-89 |
| N.B. | 15,000 | 7,307 | 22,307 | 67:33 | - | 8,500 | 3,000 | 2,000 | 1,500 | 15,000 | 31-3-89 |
| Man. | 14,800 | 9,900 | 24,700 | 60:40 | - | 8,000 | 4,665 | 885 | 1,250 | 14,800 | 31-3-89 |
| Sask. | 3,190 | 3,190 | 6,380 | 50:50 | - | 2,200 | 400 | 400 | 190 | 3,190 | 31-3-89 |
| Que. | 50,000 | 50,000 | 100,000 | 50:50 | 50,000 | --- | --- | --- | --- | --- | 31-3-90 |
| Ont. | 15,000 | 15,000 | 30,000 | 50:50 | 4,000 | 6,550 | 3,550 | 200 | 700 | 11,000 | 31-3-90 |
| B.C. | 5,000 | 5,000 | 10,000 | 50:50 | 4,000 | 1,000 | --- | --- | --- | 1,000 | 31-3-90 |
| **TOTAL** | 134,515 | 107,817 | 242,332 | | 61,300 | 43,155 | 16,390 | 6,930 | 6,740 | 73,215 | |

* The federal costs in respect of these MDAs are included in the expenditures of the department that is responsible for delivery - e.g., Geological Survey of Canada, CANMET and EMR - Mineral Policy Sector (see respective assessment notes).

**Amendment pending to transfer $1.4 million ($1.3 million from Economic Studies and $100,000 from Public Information) to Federal Contribution to permit Nova Scotia to advertise and deliver Firm-Specific Program.

## GEOLOGICAL SURVEY OF CANADA (GSC)

### OBJECTIVES

To ensure the availability of comprehensive knowledge, technology and expertise pertaining to the geology of the Canadian land mass and offshore areas, including mineral and energy resources and conditions affecting land and sea bed use, as required for the effective exploitation of mineral and energy resources, effective use of land, estimation of the resource base of Canada and formulation of policies.

### AUTHORITY

The Resources and Technical Surveys Act R.S.C. 1970, c. R-7 as amended by the Government Organization Act, R.S.C. 1970.

The Department of Energy, Mines and Resources Act R.S.C. 1970, as amended by the Government Organization Act, R.S.C. 1970.

### DESCRIPTION

The Geological Survey of Canada (GSC), founded in 1842, is part of the Earth Sciences Sector of the Department of Energy, Mines and Resources (EMR). The GSC undertakes the conduct of geological, geophysical and geochemical research and surveys; estimation of mineral and non-renewable energy resources; investigation of geological phenomena affecting engineering works and the environment; development of geophysical and other technologies; development of national geoscience standards; the fostering of Canadian geoscience and Canadian international geoscience activities; cooperation with the provinces; provision of advice to government, and production and dissemination of maps and reports.

In 1984/85 the GSC was organized into eight divisions across the country. Some of these divisions pursued responsibilities which were national in scope, e.g., Economic Geology and Mineralogy Division while the others confined their responsibilities largely to regional matters e.g., Cordilleran Geology Division which studies the composition, age, distribution and origin of the rock of British Columbia and the Yukon.

## Geological Survey of Canada - Divisional Organization

| **Division** | **Location** | **PYs (1983/84)** |
|---|---|---|
| Cordilleran Geology | Vancouver | 44 |
| Sedimentary and Petroleum Geology | Calgary | 141 |
| Pre-Cambrian Geology | Ottawa | 75 |
| Economic Geology and Mineralogy | Ottawa | 52 |

| **Division** | **Location** | **PYs (1983/84)** |
|---|---|---|
| Resource Geophysics and Geochemistry | Ottawa | 96 |
| Terrain Science | Ottawa | 65 |
| Geological Information | Ottawa | 98 |
| Atlantic Geoscience Centre | Dartmouth | 103 |

(In 1984 the Central Laboratories and Services Division in Ottawa (49 PYs) was assigned to the Resource Geophysics and Geochemistry, and the Economic Geology and Mineralogy Divisions, thus assigning the services to those divisions having the major requirements).

The GSC is largely a field-oriented scientific organization which conducts systematic examinations and mapping of the Canadian land mass, and its associated hazards. It has a marine institution (Atlantic Geoscience Centre) carrying out similar systematic geologic and geophysical examinations in the Atlantic and eastern Arctic Oceans and a unit at the Pacific Geoscience Centre in Sidney, B.C. (managed by the Earth Physics Branch).

In performing its tasks the GSC develops the broad fundamental information which is the underpinning of the continuing development of the oil/gas/coal and mineral industries in Canada. Considerable cooperation takes place with the private sector and provincial authorities where more specific capabilities exist to satisfy their own particular requirements. An Industrial Advisory Committee on Earth Sciences provides key advice to the Sector, including the work of the GSC. The Canadian Geoscience Council provides, on a regular basis, more focused reviews of the work of the GSC. The Advisory Committee is composed of members representing the mining and petroleum industries, provincial governments and the universities.

Information from GSC work in the form of reports, papers and maps is generally available. Open File compilation of recent data can be consulted by interested parties as required. Sales of information (and rock sets) through sales offices across Canada have been fairly constant over the past eight years at about $190,000 per annum.

## BENEFICIARIES

The oil/gas/coal and mineral sectors of the economy, provincial governments, universities, Atomic Energy of Canada Limited (Nuclear Fuel Waste Management and uranium assessment), other federal government departments, the general public and the international science community.

## EXPENDITURES ($000's)

| | 81/82 | 82/83 | 83/84 | 84/85 | 85/86 |
|---|---|---|---|---|---|
| PYs | 763 | 775 | 800 | 805 | 831 |
| Salaries and wages | 26,400 | 30,245 | 32,577 | 35,400 | 38,542 |
| Other O&M | 12,972 | 17,322 | 17,996 | 29,519 | 41,717 |
| Capital | 1,574 | 2,419 | 3,028 | 5,222 | 5,346 |
| Grants | 43 | 43 | 43 | 0 | 0 |
| Contributions | 0 | 0 | 810 | 63 | 0 |
| **TOTAL** | 40,989 | 50,029 | 54,454 | 70,204 | 85,605 |
| Revenue | 141 | 224 | 368 | 198 | 167 |

Resource totals exclude Financial Management Branch component of the GSC for 1983/84 onwards. (@ $240K and 7 PYs/year).

## OBSERVATIONS

The following observations are a summary of those made by the study team on Major Surveys:

a. the GSC has been reviewed extensively in the last few years and this has been done with a great deal of input from the private sector;

b. the GSC is meeting its national responsibilities and its national and international standing is high;

c. there is no substantial duplication of work with other organizations. The private sector is highly supportive of its work and objectives;

d. extension of jurisdiction offshore will demand an increase in the GSC's marine geoscience activities;

e. the GSC has acquired substantial additional resources in recent years through special funding, and most of these funds have been used by contracting-out;

f. the GSC has an "aging" problem as a result of low attrition and a reduced intake of new personnel;

g. there is difficulty in contracting-out scientific services, because timeliness is often vital, and because the policy of "lowest-bidder" is unsuitable to scientific organizations where quality of work may be the key.

The following observations arise as a result of the Natural Resources study team's examination of the GSC, primarily in connection with their activities under the Mineral Development Agreements (MDAs):

a. The activities of the GSC make a major, valuable contribution to mineral exploration and development in Canada;

b. the GSC has provided direct delivery of parts of the programs where this was appropriate, and this role has provided an opportunity for much greater coordination of their activities with those of the provinces;

c. GSC expenditures have increased significantly over several years, primarily related to special projects involving international boundary disputes, offshore geological activities and MDAs;

d. approximately one-half of GSC A-Base funds are directed toward geoscientific activities in the northern territories. DIAND also performs geological services in the North, although their activities tend to focus on more detailed mapping of areas of current interest to industry;

e. the activities of the GSC lack coordination with other government efforts and are not well focused on the immediate needs of the minerals and metals sector; and

f. industry has, in some cases, been critical of the significant delays in publishing GSC maps.

## ASSESSMENT

The assessment of the study team on Major Surveys was, in summary:

a. the GSC should improve its branch strategy with respect to mapping, and develop an overall national plan for mapping consistent with the activities of other organizations;

b. the lack of a national strategy in mapping and resource development is a serious gap;

c. the "age problem" is acute and must be tackled;

d. the organizational framework of the GSC and Earth Physics Branch could benefit by rationalization.

The GSC is an important part of the spectrum of services in minerals, metals and energy provided by EMR.

The GSC's objectives should be more clearly focused and coordinated with those of other federal departments supporting the minerals and metals sector.

GSC activities, particularly those carried out under federal/provincial MDAs, should be more responsive to the needs of the industry. There is a need for greater industry input into the establishment of priorities and selection of projects.

**OPTIONS**

The study team recommends to the Task Force that the government consider developing a strategic plan for the Geological Survey of Canada, setting objectives that are clearly consistent with the national policy for the mineral and metals sector. (See Mineral Policy Sector recommendation).

## OVERVIEW

## NATURAL RESOURCES NORTH OF 60°

### Potential

Yukon and Northwest Territories comprise 40 per cent of Canada's land area and have approximately 75,000 people. This vast region contains a variety of geological environments with mineral potential similar to those found south of 60°. In 1983, northern mines produced 23% of the zinc, 27% of the lead, 17.2% of the gold, 6.2% of the silver and 96.9% of the tungsten in Canada. There is a substantial inventory of major deposits which could eventually, with appropriate technology, infrastructure, and market conditions, be developed.

The resource potential of the North extends beyond the mineral sector to include forest, water, wildlife, fish, and recreation. Large volumes of commercially viable timber for local use exist on Crown lands. Other exploitable resources include northern foods, furs, and fish, particularly in areas accessible for sport fishing, and - potentially - petroleum and natural gas.

### Context

In the territories, the federal Crown "owns" the resources and has delegated responsibility for the management of these resources to the Department of Indian Affairs and Northern Development (DIAND). Northern political directions are however changing, as territorial governments and Native people seek greater influence over development by acquiring land rights and increased powers of self-government. In this context, DIAND's responsibilities are primarily federal and transitional: to further northern self-government and economic self-sufficiency while defining and protecting Native and national interests.

**Land claims** - Settlement of comprehensive land claims is important for the development of natural resources north of 60°. There is at present considerable uncertainty concerning the ownership of certain Crown lands. It is generally expected, on the basis of the Committee of Original Peoples Entitlement (COPE) settlement and Council for Yukon Indians negotiations, that claims settlements will lead to more extensive private (Native) ownership of former Crown lands. Many of these lands could include freehold mines and minerals. Delays in settling this issue create uncertainty which has a detrimental effect on resource development.

**Territorial self-government** - Ownership and control of non-claim lands is also a contentious issue, which may well be settled quite differently in the North than in the provinces. In the North, where 40 per cent of Canada's land mass is inhabited by approximately 75,000 northerners, Canada has maintained federal Crown ownership. Some favour continuation of this approach while others would prefer a provincial-type regime.

At the same time, there has been increased devolution of quasi-provincial administrative powers to the Territories. While policy making remains centralized in Ottawa, the territorial governments are moving into administrative and regulatory areas traditionally handled by DIAND's northern program. Both territorial governments have established economic development departments with renewable and non-renewable resource management functions. As a result, the federal and territorial roles are becoming increasingly blurred and are leading to considerable tension and inefficiency in resource management.

## Issues

The political tensions outlined above cannot be resolved overnight. Strong federal and transitional leadership will be required. Concrete, pragmatic measures will also be needed to facilitate appropriate development. Issues to be addressed include:

**Competitiveness of the northern mineral industry** - Producers of metals mined in the North face increased international competition and depressed world prices over which they have no control. In addition, they also face higher development and operating costs. To be successful, developers in the North require larger, richer orebodies with favourable mining and concentration characteristics, appropriate infrastructure and a stable long-term approach to regulations and northern (taxation) benefits. It is therefore critical to ensure that mineral development is based on a sound understanding of international markets and trade opportunities as well as on the potential of new technology to reduce production and environmental protection costs. It is also critical to ensure that specialized government support, such as geoscience and mapping, is focused on areas where mine development is possible.

**Resource diversification** - The North depends heavily on the mining sector. In 1982, mining in the territories made a direct contribution to the GNP of 18%, a contribution which is about 15 times greater than in most mining provinces. It also provided for almost 16% of employment from 1976 through 1981, or about nine times the Canadian average. This heavy reliance on one sector makes the Territories particularly vulnerable to cyclical downturns,and tempts governments to subsidize uneconomic mining activities for employment reasons. In this context, measures to support economically-viable mining activities should be accompanied by measures to diversify the Territories' economic base in such sectors as forestry, sport and commercial fishing, furs, and inter-settlement trade.

**The "regulatory nightmare"** - Approval procedures North of 60° involve numerous committees and review boards and as many as 72 Federal Acts, regulations, and territorial ordinances. Each regulation is designed to meet positive ends, e.g. to ensure adequate environmental protection, to prevent wasteful use of resources, and to minimize negative impacts on Native and northern lifestyle. Cumulatively, however, these regulations add up to a confusing maze. The result is a need for "pathfinder" programs (Major Projects Program) and a feeling on the part of numerous commentators that a "process set in place to safeguard legitimate interests in fact ends by paralyzing constructive development."

The study team felt that a number of concrete measures could be taken to simplify this maze, such as developing environmental standards and technology-based guidelines; simplifying and rationalizing regulations on the basis of these standards; and devolving regulation to territorial governments within an appropriate framework and timeframe. In this context, the study team noted a particular need to address inconsistencies in the application of the Fisheries Act and the Northern Inland Waters Act to placer operations.

**Land use and infrastructure** - DIAND has recently established joint comprehensive land use committees with the Territorial governments. The private sector generally supports a forum for settlement of land use issues but has some reservations about the viability of a comprehensive, "holistic" approach. Instead, industry seems to favour early development of practical guidelines concerning:

a. Multipurpose areas - mineral development is currently prohibited in national parks, wildlife and migratory bird sanctuaries, and International Biological Program sites. Industry fears that tenure of mining lands and access to mining properties could be severely affected by withdrawal of land for single or limited use purposes and proposes "multi-purpose" use of such lands, at least on a pilot basis.

b. Infrastructure - there is a need for a policy and guidelines for federal investment in this area, given the importance and cost of infrastructure for resource development. Current practices vary enormously.

c. Rationalization of environmental legislation and regulations - there is a need for rationalization of the Fisheries Act and the Northern Inland Waters Act on the basis of environmental standards to be developed under the leadership of the Minister of the Environment. (See Environment Program Review.)

## Assessment

DIAND's responsibilities under this program relate to the different regime of land and resource ownership north of 60°. As the federal manager of Crown-owned lands, DIAND must ensure that these resources are used for the benefit of Canadians and that the Crown derives an appropriate return from mineral exploitation. It also has special federal trust responsibilities for Native people, whose comprehensive land claims could have a major impact on resource development in the North.

These federal and transitional responsibilities call for strong leadership. Issues are complex and the number of interveners calls for considerable sensitivity. DIAND's role as coordinator in the North does not necessarily mean, however, that DIAND should perform all functions itself. The international factors affecting the mineral sector suggest that the northern mining interest would be better served if northern mineral policy were integrated within a broader national policy as outlined in the Minerals Overview. Similarly, national technological and geoscience expertise could be better tapped for the benefit of the North through integration of northern Economic Development Agreements into the ERDA process.

Transition towards shared responsibility in the North would be facilitated by the creation of territorial mines departments with responsibility for such activities as granting and maintenance of mineral rights; collection of Crown revenues; health and safety inspection. A review of legislation affecting mineral development is required and more appropriate federal and/or territorial legislation will need to be put in place. Current fiscal arrangements will also need to be reviewed and revised.

In the area of land, forest and water management, strong leadership will also be required to balance federal and transitional responsibilities. Immediate devolution would only transfer problems to another level of government. Cooperative efforts are required to solve major legislative, regulatory, and specialized problems before any government, whether federal or territorial, can be expected to manage effectively. This is particularly important in an area where basic land ownership and management issues have yet to be settled.

Integration of northern development and Indian affairs functions in a single department under one Minister leads to conflicting responsibilities and objectives. While this affects natural resource development, it also goes far beyond into other areas. The Prime Minister may wish to consider focusing DIAND's mandate solely on its responsibilities for native peoples, once immediate issues concerning northern regulation and devolution to the territories have been resolved.

# NON-RENEWABLE RESOURCE MANAGEMENT

## OBJECTIVES

Headquarters

To manage the mineral resources in the North and to recommend and implement policies, programs and plans leading to exploration, production, and conservation of northern mineral resources.

To assure orderly regulation of the allocation of mineral rights and ensure an appropriate return to the Crown in fees, rentals, and royalties in exchange for the right to exploit the minerals.

Yukon

To maintain and enhance Yukon region's capability to encourage, support, and regulate orderly mining exploration, development, and production (particularly placer and lode precious metals) and to hasten Yukon's economic recovery.

Northwest Territories (N.W.T.)

To manage non-renewable resources so as to contribute to the on-going enhancement of the social/cultural well-being of northerners and the economy north of 60 degrees by: granting and maintaining mineral rights; collecting Crown revenues; collecting and distributing data; and implementing policies concerning the granting of mineral rights, mineral exploration, and development and operation of mines.

## AUTHORITY

DIAND Act; Territorial Lands Act and Regulations; Public Lands Grants Act; Yukon Quartz Mining Act; Yukon Placer Mining Act; Prospectors Assistance Regulations; Territorial Coal Regulations; Territorial Dredging Regulations; Canada Mining Regulations.

## DESCRIPTION

Ottawa headquarters, Northern Mineral Resources section of DIAND, has the responsibility for providing policy direction to two regional offices (Yukon and N.W.T. programs) whose primary function is the orderly allotment of tenure to mineral developers, and the collection of appropriate fees and rentals in return for the rights to extract the mineral values from these lands.

The three groups also have a variety of other objectives including the development of mineral policy,the dissemination of geological and statistical data, and the provision of grants to individuals and associations.

## BENEFICIARIES

Prospectors, miners, and mining companies, territorial mining associations, and northern residents.

## EXPENDITURES (\$000s)

| | 83/84 | 84/85 |
|---|---|---|
| PYs | 72 | 67.5 |
| Salaries and Wages | 2,425 | 2,632 |
| Other O&M | 1,232 | 1,588 |
| Grants/Contributions | 116 | 136 |
| Capital | 519 | 410 |
| **TOTAL** | 4,292 | 4,766 |
| Revenues | 1,995 | 3,050 |

## OBSERVATIONS

The mineral industry is the leading producer of new wealth in the territories. In Yukon, before the recent downturn, this sector accounted for more than 80 per cent of the total value added by all goods producing industries in the territories. The territories together contributed 23% of the zinc, 27% of the lead, 17.2% of the gold, and 96.9% of the tungsten produced in Canada in 1983.

Industry profitability is heavily influenced by such factors as world metal prices, world metal demand, and technological change. International overcapacity and depressed prices have had a serious impact on mining, particularly in Yukon where major mining operations have been closed or suspended. This points to a clear need for market intelligence and trade strategies to provide a sound basis for government and industry decisions.

The northern mineral industry has repeatedly asked the federal government to "establish a clear, strong policy and legislative framework in support of northern mineral development over the next decade". The policy has yet to be developed, although the department did issue a discussion paper in May 1985 entitled The Northern Mineral Sector: A Framework for Discussion. This document seeks input from industry and northerners on a number of key policy issues affecting the sector as a whole and the North in particular. Input should be integrated for reasons outlined above, into a national policy on mineral development which would:

a. identify realistic opportunities in various sectors of the industry based on market, geoscientific, and technological data;

b. clarify the roles and responsibilities of DIAND, sectoral departments (EMR/GSC) and the territorial governments in the North;

c. serve as a framework for federal/territorial Mineral Development Agreements.

A healthy exploration and mining industry presupposes a clear and consistent legislative and administrative framework. The Canada Mining Regulations, applicable only in the N.W.T., are considered satisfactory. Proposals to modernize Yukon legislation are resisted by the industry which fears introduction of greater ministerial discretion and more stringent environmental controls.

Industry concerns are primarily directed towards complex and often contradictory regulations administered by DIAND or other federal departments: the Northern Inland Waters Act and Regulations; the Fisheries Act; the Territorial Land Use Regulations, and the Environmental Assessment Review Process. Industry recognizes the necessity of environmental and land use regulations, but complains that the lack of clear standards adds to the already high cost of exploration, development, and production. Licensing under the Northern Inland Waters Act can, for example, involve protracted hearings and the imposition of controversial conditions because of the absence of clear standards, legal uncertainties, and weak data on renewable resource values. Similarly, application of Fisheries Act provisions to placer operations is perceived as too arbitrary to provide a sound basis for industry compliance.

A program of mineral resources land rental and regulation should have a net positive cash benefit to the land owner. But, at present, cash outflow exceeds revenue. The claim staking activity in 1984/85 is one-half what it was in 1981/82 in Yukon, while staff reduction was less than five per cent. In this context, the current royalty, rental, and fee structure should be reviewed. Costs of administration should also be reviewed and adjusted to reflect changes in the level of mineral activity.

## ASSESSMENT

As the federal manager of Crown-owned lands, DIAND must ensure that these resources are used for the benefit of Canadians and that the Crown derives an appropriate return from mineral exploitation.

The northern mining interest would be better served if northern mineral policy were integrated within a national policy based on market intelligence and a sound assessment of trade opportunities. Transition towards shared responsibility in the North would be facilitated by the creation of territorial mines departments with delegated responsibilities for such activities as granting and maintenance of mineral rights, collection of Crown revenues, health, and safety inspection. The department is already moving in this direction. In this process, costs of administration should be reviewed and adjusted to reflect changes in level of mineral activity. A review of legislation affecting mineral development is required and more appropriate federal and/or territorial legislation will need to be put in place.

## OPTIONS

The study team recommends to the Task Force that the government should consider a plan to:

a. Integrate northern mineral policy considerations into a national mineral policy which will be developed under the leadership of EMR, as outlined in EMR Mineral Policy recommendations, and which will:

   (i) identify realistic opportunities in various sectors of the industry based on market, geoscientific, and technological data;

   (ii) clarify the roles and responsibilities of DIAND, sectoral departments (EMR-GSC) and the territorial governments in the North; and

   (iii) serve as a framework for federal-territorial Mineral Development Agreements.

b. Transfer DIAND policy and information functions and resources related to science, technology, and markets to EMR.

c. Reduce DIAND person-years and resources by 35 per cent in the context of a. and b. above.

The study team further recommends to the Task Force that the government consider:

a. A framework for the establishment of territorial "mines" departments with delegated responsibilities for such activities as administration of mineral regulations; mine health and safety inspections; development of territorial exploration; production and conservation policies; and quasi-provincial geological and mapping activities.

b. A plan to reduce departmental resources and person-years accordingly.

## LAND, FOREST AND WATER MANAGEMENT

### OBJECTIVES

To inspect, license, or permit the use, conservation and protection of lands, forests and water; to monitor and enforce compliance with guidelines and regulations; to provide adequate information to the Minister and the public.

### AUTHORITY

Land: Territorial Lands Act and Regulations
Land Titles Act
Public Lands Grants Act
Canada Land Surveys Act

Water: Northern Inland Waters Act and Regulations
Arctic Waters Pollution Prevention Act and Regulations

Forests: Territorial Lands Act
Territorial Transfer Regulations
Forest Protection Ordinance
Commissioner's Land Ordinance

General: DIAND Act
Yukon Act
Northwest Territories Act

### DESCRIPTION

This is a broad program of renewable resource management carried out by the Department of Indian Affairs and Northern Development's (DIAND) Northern Affairs Program under the Northern Renewable Resources and Environmental Protection Planning Element. The program is delivered through a headquarters policy branch, the Yukon region with eight district offices, and the Northwest Territories region with six district offices. It encompasses the following components:

Yukon/N.W.T. Land Management
Yukon Land Disposition
N.W.T. Crown Land
Yukon Lands, Water and Forests

Yukon/N.W.T. Water Use
Northern Inland Waters
Yukon Forest Resources
Yukon Forest Fire Protection
Northwest Lands Timber Management
N.W.T. Forest Production

Responsibilities include developing and implementing policy, regulations, and plans for the conservation and utilization of land, forests and water; developing and maintaining a comprehensive environmental management system; and managing renewable resources in Yukon, N.W.T., and adjacent offshore area.

In addition to DIAND responsibilities outlined above, Environment Canada (EC), Fisheries and Oceans Canada (DFO), and the territorial governments have programs relating to the renewable resources and the environment.

**BENEFICIARIES**

Territorial governments, environmental groups, resource developers, Native groups, northerners and Canadians in general.

**EXPENDITURES ($000s)**

| | **83/84** | **84/85** | **85/86** | **86/87** | **87/88** |
|---|---|---|---|---|---|
| PYs | 355 | 340 | 340* | 340 | 340 |
| Operation | 34,330 | 32,180 | 31,109 | 31,109 | 31,109 |
| Capital | 3,220 | 3,601 | 3,601 | 3,224 | 3,224 |
| Grants/ Contributions | 89 | 82 | 116 | N/A | N/A |
| **TOTAL** | 37,639 | 35,863 | 34,826 | 34,333 | 34,333 |
| Revenue | 382 | 391 | 396 | N/A | N/A |

*Most of these person-years (123.5) are allocated for fire fighting activities.

## OBSERVATIONS

This program is at the heart of the territorial governments' aspirations for autonomy. Both Yukon and N.W.T. governments have expanded their capabilities in resource management and environmental protection. They are also actively pursuing additional authority over the management of resources and resource revenues. It is also expected that Native claim organizations will want to assume similar responsibilities under aboriginal legislation.

This is sometimes considered a "no win" program. It seeks to balance conflicting objectives (development versus conservation) and conflicting user priorities for land, water, and forest. DIAND has been criticized by some for having too strong an environmental bias and for implementing a regime which unduly raises costs and delays decision-making. Others contend that DIAND has a pro-development bias and that environmental programs are inadequate; water, land, and habitat protection are seen as particularly weak.

Overlapping legislation and regulation, administered by a variety of departments, create problems and conflicts, particularly in the area of water management. These problems are due, in large measure, to the absence of water quality (and effluent) standards, the failure to set priorities among the various classes of use, the lack of adequate provision for compensation, and the failure to integrate water management into the Northern Land Use Planning process. Legislative and administrative adjustments are required to resolve conflicts in the application of the Northern Inland Waters Act and the Fisheries Act to specific mining proposals.

Northern Land Use Planning was initiated by the federal government in 1981. In 1985, joint comprehensive Northern Land Use Planning Committees were established. This is considered a major step forward. Industry is however concerned that committees may focus on long-term, "holistic" approaches instead of developing practical guidelines concerning:

a. multi-purpose areas: mineral development is currently prohibited in national parks, wildlife and migratory bird sanctuaries, and International Biological Program sites. Industry fears that tenure of mining lands and access to mining properties could be severely affected by withdrawal of land for single or limited use purposes and propose "multi-purpose" use of such lands, at least on a pilot basis;

b. infrastructure: there is a need for clear policy and guidelines, given the importance and cost of infrastructure for resource development. Current practices vary enormously, ranging from no assistance at all (Polaris and Lupin Mines), to cost-sharing (access roads), to cost-recovery (Great Slave Lake Railway) and equity participation (Nanisivik). Issues also arise concerning the scale of structures. the adoption of "fly in - fly out" as opposed to short-term communities; and the basis for cost recovery (Nanisivik); and

c. rationalization of environmental legislation and regulations: the Fisheries Act and the Northern Inland Waters Act require rationalization, preferably on the basis of environmental standards to be developed under the leadership of the Minister of the Environment. (See Environment Program Review Report.)

Much of DIAND's resources are currently allocated to fire control, and inadequate attention is being given to the potential contribution of forest resources to the northern economy. Large volumes of commercially viable timber for local use exist on Crown lands, particularly in southwestern N.W.T. and the Liard watershed of Yukon: roughly 72.8 billion board feet in N.W.T. and 44.9 billion board feet in the Yukon. Yet, in 1983, the N.W.T. harvested only 5 million board feet and imported an additional 15 million board feet for local use.

According to a 1982 evaluation:

> "Knowledge of the resource and of the prospects for its sustained use are sketchy. Forest management policies have not been articulated. Legislation for regulating the current low levels of timber is virtually useless. Comprehensive forest management legislation to encourage and deal with forest industry development is absent... . Stumpage rates bear no relationship to the value of products harvested, have no impact on

> encouraging efficient logging operations, and annual timber revenues accruing to the department are less than half what they should be for the volumes harvested. The lack of guiding forestry policy and priorities has resulted in a variety of regional activities that have been wasteful of public funds..."

Problems also exist in respect of fire control. In the N.W.T., fire has destroyed large areas valued by Native people for hunting and trapping. Discussions are currently underway concerning the transfer of fire management programs to the territories.

## ASSESSMENT

DIAND's administration of this program suffers from a lack of appropriate standards and rational regulations. Cooperative efforts are required to solve major legislative, regulatory, and resource management problems.

This is a key program from the point of view of territorial aspirations for self-government. Plans are being developed in DIAND for the transfer of specific functions to the territorial governments. Devolution cannot, however, be seen as the solution to the problems outlined above. These problems must be addressed before any government, federal or territorial, can be expected to manage effectively.

## OPTIONS

The study team recommends to the Task Force that the government consider proposals concerning provision of guidelines and standards which can be used to rationalize legislation and regulations as outlined below.

Proposals would be reviewed in the context of the Environment program review and in collaboration with the joint Northern Land Use Planning Committees and territorial governments concerning the Inland Waters Act, the Arctic Waters Pollution Prevention Act and the Fisheries Act.

These proposals would suggest ways to rationalize this legislation so as to place it on a sound environmental and technological basis and facilitate administration.

The study team further recommends that the government, in collaboration with the territorial governments, should request the joint Northern Land Use Committees to prepare guidelines for consideration regarding: multi-purpose land use (feasibility, impacts, and pilot projects) and infrastructure support by the federal and territorial governments for resource development.

The study team also recommends that, in collaboration with the territorial governments, the government should consider proposals for:

a. development of a forest management policy for the North within the context of the existing federal-provincial forest strategy, including delineation of responsibilities for forest management between the Canadian Forestry Service, DIAND, and the territorial governments;

b. up-dating and simplifying Timber Regulations and administrative procedures.

The government should, in addition, consider a framework and timetable to delegate specific land, forest, and water management activities to the territorial governments, in the context of changes outlined above, and reduce departmental resources and staff accordingly.

## ECONOMIC DEVELOPMENT AGREEMENTS

### OBJECTIVES

To provide for the Department of Indian Affairs and Northern Development (DIAND) and federal sectoral departments to enter into sub-agreements with the territories for joint funding of programs to respond to territorial needs.

To facilitate federal/territorial co-operation in initiatives to promote planning and implementation of economic and socio-economic development in the Territories.

### AUTHORITY

DIAND Act: Section 5; NWT Act Section 15 (Order-in-Council PC 1982-3837, December 15, 1982); Yukon Act Section 18 (Order-in-Council PC 1984-1911, May 31, 1984).

### DESCRIPTION

These Economic Development Agreements (EDAs) are four-year umbrella agreements between the federal (DIAND) and territorial governments. They provide for the coordination of the economic development efforts of the two levels of government, and for the delivery of specific programs through subsidiary agreements in areas such as natural resources, tourism, and small business.

These EDAs define the roles each of the parties will play in the process and provide specifically in both N.W.T. (1982) and Yukon (1984) agreements for:

a. an annual review of progress by DIAND and the Government Leader (Yukon) or the Commissioner (N.W.T.);

b. establishment of a policy committee chaired jointly by senior managers from DIAND and the territorial governments. Membership consists of representatives of federal and territorial departments co-chairing sub-agreements and signatories to memoranda of understanding. Provision is made for representatives of other signatories to the sub-agreements to attend on invitation as observers.

Duties of the committee include coordinating all activities undertaken pursuant to the agreement; directing, reviewing, and recommending approval of the annual review; providing policy direction to management groups as required for coordination; providing direction concerning the involvement of community-based and private organizations in the sub-agreement.

The Canada/Northwest Territories Agreement was signed in 1982 and has three sub-agreements: Human Resource Development; Domestic Market Development; and Natural Resources Development. The Natural Resources sub-Agreement includes:

a. Inter-settlement Trade: This component is managed by the Government of the N.W.T.. It is aimed at assisting traditional harvesters of "country" food develop businesses to supply food to other communities, or to individuals who have entered the wage economy and do not have time to harvest their own food. The program also supports trade projects involving the supply of carving materials such as soapstone, whalebone, or ivory.

b. Renewable Resources: This component is managed by DIAND and focuses on opportunities to use renewable resources as the basis for commercial undertakings: game outfitting; fur farming; commercial fishing, etc.

The Canada/Yukon Agreement was signed in 1984, and has four sub-agreements: tourism, mineral resources, renewable resources, and economic development planning.

a. Mineral Resources: Programs are intended to provide detailed mapping by DIAND of designated target areas, and areas with existing transportation and community infrastructure; to provide geochemical information that will help define the mineral potential of selected areas and stimulate exploration; and to provide research and pilot projects to assist the placer mining industry meet new procedures for improved environmental protection.

b. Renewable Resources: This program is delivered by the Yukon government and provides assistance for developing and improving the viability of wildlife-based industries; promoting fish enhancement programs and the development of sport and commercial fisheries; planning agricultural development and promoting viable farm operations; planning and constructing forest access roads in response to local demand for heating fuel requirements; providing assistance for resource inventories and assessment studies. The program also supports renewable resource demonstration projects to promote efficient utilization of outputs from the hunting, fishing, trapping, agricultural and forestry sectors.

c. Economic Development Planning: The "planning" component of this Yukon territorial government-managed program will develop plans for priority development. The Community Economic Development Planning component provides for communities to hire consultants or economic planners to prepare an economic development plan. This has never been done for Yukon communities. It is hoped this program will enable communities to assess the contribution of existing resources to the local economy, to identify opportunities and obstacles to growth, to determine economic development aspirations, and to priorize and develop strategies to achieve objectives.

A listing of programs and funds included under the EDAs is attached as Appendix A.

## BENEFICIARIES

Northern residents including Natives, industry groups and associations, and territorial governments.

**EXPENDITURES ($000's)**

Northwest Territories

a. Planned Expenditures: Natural Resource sub-Agreement

| | 83/84 | 84/85 | 85/86 | 86/87 |
|---|---|---|---|---|
| Grants & Contributions | 837 | 1,147 | 1,170 | 1,058 |

b. Actual and Projected Expenditures

| | 83/84 | 84/85 | 85/86 | 86/87 |
|---|---|---|---|---|
| Grants & Contributions | 58.9 | 974 | 1,671.3 | 967.5 |

NOTE: Actual and projected expenditures are some $540,000 less than planned. This is due to lapsed funds in the first two years. Projected expenditures are fully committed in principle. Unless lapsed funds can be moved to current and future years, no more projects can be approved.

Yukon - All expenditures are planned; there have been no expenditures to July 31, 1985.

| | 85/86 | 86/87 | 87/88 | 88/89 |
|---|---|---|---|---|
| Mineral Resources | 1,054 | 1,027 | 851 | 567 |
| Renewable Resources | 1,100 | 1,180 | 1,020 | 500 |
| Economic Development Planning | 300 | 200 | 100 | -- |
| **TOTAL** | 2,454 | 2,407 | 1,971 | 1,067 |

**OBSERVATIONS**

Federal-provincial agreements have been used as a regional development tool since the 1960s. These agreements and the corresponding northern EDAs are potentially powerful and flexible instruments for improving coordination between the two levels of government, and for providing custom-designed initiatives to respond to specific circumstances. This is particularly important in the North which tends to require different and smaller-scale programs than the South.

The use of separate EDAs, rather than provincial-type ERDAs, in the North can be attributed to DIAND's overall responsibility for federal coordination in the North, as well as to the split of quasi-provincial functions between DIAND and the territories. Mapping services provided elsewhere by the provinces and by the GSC are, for example, handled directly by DIAND under these sub-agreements.

The N.W.T. agreement is meeting real needs and initial assessments indicate that a significant number of jobs and businesses have been created or expanded as a result of the agreement. In the first two years of operation, the Domestic Market sub-agreement resulted in some 200 jobs, many of which will be ongoing and will have levered, non-government funding in a 1/2.34 ratio. The other two sub-agreements, although a little slower getting started, have in the first two years approved about 60 projects about half of which are directly related to renewable resource use. Promising projects include: reintroduction of beaver into previously burned-out areas; processing and sale of country food (muskox, reindeer, caribou) in Inuvik; a pilot fur farm in Hay River; and a marketing program for polar bear hunts. Similar data is not available for the Canada/Yukon EDA since this agreement has only just been signed.

Related programs include:

a. DRIE's Special Agricultural and Rural Development Agreements (Special ARDA) in both the N.W.T. and Yukon. Special ARDA has several programs which are quite similar to those included under the EDAs. There is some confusion over where to apply, as well as some duplication in support staff in DRIE and the territorial governments. There seems to be some consensus in the territories that these programs should be integrated along with the EDAs into the broader ERDA process managed by DRIE.

b. The DRIE-Industrial Regional Development Program (IRDP). Little use has been made of this program to date. There is some interest on the part of the territories in being included under proposals for IRDP devolution to the provinces.

Problems noted with respect to the present EDA process include:

a. A need to develop more flexible and effective funding and approval mechanisms similar or identical to those used by DRIE in the ERDA process: Northerners have commented that "DIAND has experienced difficulty in moving funds from one program to another, in carrying funds over into a new fiscal year, or in increasing the funding required in a fiscal year. This is a serious problem in a program such as the EDAs which cannot predict what kinds of projects will be applied for". The suggestion was made that "it would be more cost-effective to utilize the expertise and funding procedures in DRIE (through integration of EDAs into the ERDA process) rather than change the DIAND system".

b. A need for more effective consultation of user groups prior to and during negotiation of agreements. When the agreements were negotiated, little effort seems to have been made to set up a consulting mechanism or provide a role for users in the initiation, management, and implementation of the sub-agreements. The policy committee in the N.W.T. subsequently responded to this need by creating an advisory group. In future, there should be a clearly defined role for the private sector throughout the EDA process.

c. Inadequate coordination of DIAND programs with GNWT, DRIE, and Canada Employment and Immigration Commission programs.

## ASSESSMENT

The EDA process has considerable potential for assisting the northern territories to develop their economies. This process with its locally-based management committees can deal with the varied small scale needs of northern Canada. It can also be used to support a gradual devolution of project funding and management responsibilities to the territorial governments.

As urged by territorial government spokesmen, consideration should be given to integrating EDAs into the ERDA process managed by DRIE. Such integration would have to take into account DIAND's responsibilities as federal coordinator in the North and the current split of quasi-provincial functions between DIAND and the territorial governments.

## OPTIONS

The study team recommends to the Task Force that the government, in consultation with the territorial governments, consider:

a. Integrating northern Economic Development Agreements into the ERDA process.

b. Integrating DRIE's "Special ARDA" into the ERDA process.

c. Including the territories in proposals to devolve DRIE-Industrial Regional Development programs.

d. Providing for user input into the setting of priorities and selection of projects.

e. Eliminating DIAND person-years allocated to Economic Development Agreement management.

APPENDIX A

## PROGRAMS UNDER THE CANADA/N.W.T. EDAs

| | | ($000's) |
|---|---|---|
| Human Development Sub-Agreement | | 5,570 |
| Business Management | (CEIC) | |
| Options North | (CEIC) | |
| Natural Resource Development Sub-Agreement | | 4,680 |
| Intersettlement Trade | (GNWT) | |
| Renewable Resource Use | (DIAND) | |
| Domestic Market Sub-Agreement | | 10,750 |
| Business Assistance | (DRIE) | |
| Tourism Development | (GNWT) | |
| Community Based Economic Development Planning | (GNWT) | |
| **TOTAL** | | 21,000 |

## PROGRAMS UNDER THE CANADA/YUKON EDAs

| | | |
|---|---|---|
| Tourism Sub-Agreement | | 10,000 |
| Tourism Industry Support | (YTG) | |
| Market Development | (YTG) | |
| Product Development | (YTG) | |
| Mineral Resources Sub-Agreement | | 3,890 |
| Geological Mapping | (DIAND) | |
| Geochemical Surveys | (EMR) | |
| Placer Mining | (DIAND) | |
| Renewable Resources Sub-Agreement | | 4,222 |
| Renewable Resources Development Assistance | (YTG) | |
| Renewable Resources Demonstration Project | (YTG) | |
| Economic Development Planning | | 667 |
| Planning | (YTG) | |
| Community Economic Development Planning | (YTG) | |
| **TOTAL** | | 18,799 |

# NORTHERN DEVELOPMENT PROJECT COORDINATION

## OBJECTIVES

To facilitate planning, implementation, and review of major northern non-renewable resource development projects.

## AUTHORITY

DIAND Act - responsibility for coordinating federal activities in the North.

## DESCRIPTION

This program provides a "pathfinder" service for residents and proponents of major northern development projects, and coordinates the activities of federal and territorial departments and agencies. Its purpose is to simplify demands, minimize the cost of government approvals facilitate access to public hearings and accelerate the approvals process. Activities include establishment of a project management information system and promotion of a common understanding of policies and procedures.

The program is delivered from Ottawa "with coordination/information linkages to other involved parties."

## BENEFICIARIES

Private sector proponents of major northern development projects (oil, gas, mining and other industries) such as Kiewit Sons Co. Ltd., Polar Gas, Panartic Oils Ltd., Amax Mining, Gulf Resources, Dome Petroleum, ESSO. Beneficiaries also include northern residents, and government agencies involved in the North.

**EXPENDITURES ($000's)**

| | 83/84 | 84/85 | 85/86 | 86/87 | 87/88 |
|---|---|---|---|---|---|
| PYs | 6 | 5 | 5 | 5 | 5 |
| Salaries | 222 | 201 | 240 | 240 | 240 |
| Other O&M | 107 | 101 | 96 | 96 | 96 |
| **TOTAL** | 329 | 302 | 356 | 336 | 336 |

**OBSERVATIONS**

The Department of Indian Affairs and Northern Development (DIAND) is responsible for managing and coordinating governments' activities in the North in order to represent the public interest and facilitate project development.

Proponents of major northern resource development projects face a diverse and complex policy and regulatory structure. One major project coordinated under this program, the Bent Horn-Panarctic project, required liaison with Transport Canada/Canadian Coast Guard, Environment Canada, Fisheries and Oceans, EMR, Finance Canada, COGLA, and territorial government offices, as well as consultations with Inuit communities in the region.

A number of industry users feel that the DIAND "pathfinder service" should be maintained because it simplifies and facilitates approval of their proposals and because it helps them deal with northern and Native concerns and review processes.

Northern residents require timely information about project proposals and progress to intervene appropriately. Assessment of the potential impact of such projects on northern lifestyle, employment, and environment involves liaison with a variety of departments. "Pathfinder" assistance thus also benefits Northern residents affected by proposed major projects.

Presently, policy decisions regarding approval of major resource development projects are made by officials in Ottawa. Devolution of responsibilities to the Territories and simplification of the regulatory process will require changes in the nature and structure of this program. DIAND and the territorial governments are presently establishing structures for joint coordination of major projects.

## ASSESSMENT

The project approval process north of 60° is more complex than in any other jurisdiction because of the multiplicity of regulatory agencies, the increasing devolution of administrative and political authority to territorial governments, and the complexity of community concerns. In this context, industry felt that DIAND should maintain a "pathfinder" service which would act as a point of first entry into the approvals process, and would provide comprehensive information on general requirements, departmental responsibilities, and contacts. The program should also, in the opinion of industry, continue to provide advice relative to northern and Native concerns.

This program is designed to fit the present situation in which development policies and regulatory controls are largely centralized in Ottawa. Changes proposed in the administration of natural resources north of 60° in this report and in the regulatory review report will require review, on the longer term, of the necessity, scope, location, and distribution of this service. Greater emphasis should, in particular, be given to the assignment of a locally-based project coordinator at an early point in project development.

## OPTIONS

The study team recommends to the Task Force that the government, in consultation with industry and the territorial governments, should continue the Northern Development Project Coordination program while considering any program changes which may be required as a result of regulatory simplification and devolution of regulatory responsibilities to the territorial governments.

## CANADA/NANISIVIK MINES AGREEMENT

### OBJECTIVES

To assist in developing a viable economic mine site by providing infrastructure facilities.

To generate employment opportunities and other benefits for northern residents in an area where economic opportunities are limited and needed;

To advance Canada's role in Arctic shipping.

### AUTHORITY

DIAND Act: 5 (b), programs for economic development of the Territories; Cabinet Approval, March 28, 1974; Agreement between Government of Canada and Nanisivik Mines Ltd., signed in 1974.

### DESCRIPTION

Nanisivik is an underground zinc/lead mine on Baffin Island. It was developed with government infrastructure assistance of about $17.8 million (net). The federal government received 18 per cent equity interest in the project and two seats on the Board of Directors. Key features of the development agreement include provisions for:

a. maximum opportunities for the training and employment of the northern residents;

b. use of Canadian equipment and Canadian ships;

c. authority to export concentrates.

### BENEFICIARIES

Nanisivik Mines Limited, Inuit, other Canadian industry, employees, and other northerners who benefit from infrastructure facilities.

## EXPENDITURES

In 1985/86, two person-months and $11,000 in salaries and O&M have been allocated for the Monitoring Committee and support to government directors.

Under the Nanisivik Agreement, government financial assistance (excluding CMHC housing loans) was provided as follows:

**$ millions**

| **Facility** | **Expenditures** | **Capital Recovery** | **Funding Agency** |
|---|---|---|---|
| Townsite | 12.9 | 4.1 | GNWT |
| Roads | 3.2 | - | DIAND |
| Wharf | 2.8 | 2.1 | MOT |
| Airport | 5.1 | - | MOT |
| **TOTAL** | 24.0 | 6.2 | |

## OBSERVATIONS

A recent DIAND review of the project indicated that agreement objectives have generally been attained, with the exception of the 60% target for Native employment. (Native employment realized was 25%.)

Kilborn Engineering estimated the value of the federal government's 18 per cent interest at $12.5 million based on the present value of surplus working capital and future cash flows. The value is $5.5 million based on the payment for another minority interest by the majority shareholders (Mineral Resources International Limited).

DIAND is reviewing disposal alternatives for the disposal of its investment in shares of Nanisivik, including a possible transfer of this equity to the N.W.T or an Inuit group.

The requirement of an "export permit" for mines in the areas controlled by the federal government is considered by industry as an example of interference with commerce rather than assistance. No mines under provincial control require an export licence.

## ASSESSMENT

The Government of Canada can, under certain circumstances, be an appropriate builder and owner of public facilities such as roads, airports and wharves. The owner is entitled to fees from all users but may not always recover all costs.

The Government of Canada may be an appropriate financier for the construction of townsite facilities, subject to repayment by the users during the life of the project or sooner.

Guidelines for government infrastructure investments are required, as discussed under Yukon/N.W.T. Land, Forest, and Water Management program.

Mineral Resources International could have financed the mine and mill entirely from private funds. The Government of Canada, to the extent it financed the mine and mill, subsidized a viable mineral resource development project.

Canada is a trading nation and depends on exports for a high standard of living. No mine in the territories could support the processing of ferrous or base metals beyond the concentrate stage in the present marketing and trade climate. The requirement of an export licence and the limited term of the licence destroy one of the seller's bargaining points (assured ability to supply). The result is that the return to the producer, and indirectly to Canada, is reduced.

## OPTIONS

The study team recommends to the Task Force that the government, in collaboration with the Territorial governments, should continue to support viable northern mineral development opportunities by providing public service infrastructure on a fee-for-service basis, though not necessarily full cost-recovery, and by providing financing for site specific infrastructure like water, sewer, and housing on a cost-recovery basis during the life of the project.

Further, the study team recommends that the government consider:

a. Proceeding with plans to dispose of its equity interest in Nanisivik Mines.

b. Avoiding direct investments or subsidies of either capital or operating costs of mineral resource projects.

c. Eliminating any requirements for export permits for minerals produced in the territories.

## NORTHERN PARTICIPATION IN PUBLIC REVIEWS

### OBJECTIVES

To facilitate joint planning and consultation between all levels of governments and northern residents on project development issues.

### AUTHORITY

DIAND Act.

### DESCRIPTION

Contributions are provided to Native and non-Native groups to participate in formal public review hearings and consultation processes on northern development proposals.

Individual contributions do not exceed $50,000 and will be provided up to a maximum of $400,000 for a single group. Funds are used for salaries, consultants fees, legal fees, travel, telephone, supplies, and office overhead.

### BENEFICIARIES

Native and non-Native northern residents, industry involved in natural resource development.

### EXPENDITURES ($000's)

| | **83/84** | **84/85** |
|---|---|---|
| PYs | 7 | 7 |
| **Total Expenditures** | 300 | 600 |

## OBSERVATIONS

This program promotes active participation of northerners, including Native people, in consultative processes on northern developments.

Funding is also available from other sources. Yukon and N.W.T governments and other federal departments provide intervener funding for participation in review processes. The Resource Development Impacts Program (see separate note), provides similar assistance to Indians.

## ASSESSMENT

Intervention by northerners is essential if review processes are to facilitate development in ways appropriate to northern lifestyle and priorities. Assistance should, however, focus on provision of information concerning proposals and hearings and should provide funding only in cases where alternative sources of funding are not available. These services should be integrated, in the course of devolution of various regulatory responsibilities, with similar territorial programs available to all northerners, including Native people.

## OPTIONS

The study team recommends to the Task Force that in view of the availability of funding from a variety of other sources, the government consider the feasibility and impact of terminating the Northern Participation in Public Reviews program and transferring resources to the Resource Development Impacts program.

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